Aalto University
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Post-implementation challenges of utilizing a knowledge management system: An organizational view

Information Systems Science

Master's thesis

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ABSTRACT

Objectives of the Study

The objective of this study was to find out which factors primarily have an effect on individual users' attitude and behavior toward a Knowledge Management System and its usage in a unique organizational context. The primary motivator for the objective was a specific organizational issue in the case company.

Academic background and methodology

This study used the varied and diverse findings of both user IS acceptance and adoption research and user IS resistance research. A model from the user IS resistance research stream was chosen as the primary theoretical framework.

The applied methodology was the case study methodology, as the nature of the organizational issue required findings reasons for how and why that specific predicament occurred and how it could be mitigated.

Findings and conclusions

The main finding of this study was that in failed Knowledge Management System (KMS) implementations user resistance tends to be apathetic in nature, and does not develop into more aggressive forms. This fact led to the finding that the utilized theoretical framework may not be applicable in KMS implementation contexts, although further research is needed before drawing absolute conclusions.

Additionally, several managerial implications were discovered: A clear vision for the KMS's usage purposes and processes must be thought prior to go-live, the implemented KMS must have a responsible person named for maintenance and administration, the user interface must meet the everyday needs of the user base and all users should have one starting point for navigation within the KMS.

Keywords

Knowledge Management Systems, IS implementation failure, cross-unit co-operation, Microsoft Sharepoint

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ABSTRAKTI

Tutkimuksen tavoitteet

Tutkimuksen tavoitteena oli selvittää millä tekijöillä on pääasiallinen vaikutus yksilöiden asenteeseen ja käytökseen tietämyksenhallintajärjestelmää kohtaan organisaation sisäisessä kontekstissa. Erityinen ongelma case-yrityksessä oli ensisijainen motivaattori tutkimuksen tavoitteenasettelulle.

Kirjallisuuskatsaus ja metodologia

Tämä tutkimus käytti kahden tietojärjestelmätutkimuksen alan suuntauksen tutkimustuloksia; käyttäjien tietojärjestelmien hyväksymis- ja käyttöönottotutkimuksen sekä käyttäjien tietojärjestelmien vastustustutkimuksen. Käytetty teoreettinen kehys oli käyttäjien tietojärjestelmien vastustustutkimuksen suuntauksesta.

Käytetty metodologia oli case-tutkimus, koska case-yrityksen kohtaama tutkimusongelma vaati löydöksiä sille miten ja miksi kyseinen ongelma kehittyi ja miten sitä voitaisiin helpottaa tai miten se voitaisiin ratkaista.

Tulokset ja päätelmät

Tutkimuksen merkittävin tulos oli löydös siitä, että epäonnistunutta tietämyksenhallintajärjestelmän implementaatiota seuraava käyttäjien vastustus on luonteeltaan apaattista, eikä kehity aggressiivisemmaksi ajan myötä. Tämä johti siihen johtopäätöksen, että tutkimuksessa käytetty teoreettinen kehys ei välttämättä ole hyödynnettävissä analysoitaessa tietämyksenhallintajärjestelmien implementaatioita, vaikkakin jatkotutkimusta tarvitaan ennen absoluuttisten johtopäätösten vetämistä.

Tutkimus poiki myös useita liikkeenjohdollisia ratkaisuja: Tietämyksenhallintajärjestelmän käytölle ja prosesseille on oltava selvä visio ennen tuotantoonsiirtoa, implementoitavalla järjestelmällä on oltava erikseen nimetty vastuuhenkilö ylläpitoa varten, käyttöliittymän on oltava käyttäjien tarpeiden mukainen ja kaikilla järjestelmän käyttäjillä on oltava sama aloituspiste järjestelmässä navigointia varten.

Avainsanat

Tietämyksenhallintajärjestelmä, tietojärjestelmäimplementaation epäonnistuminen, , yksiköiden välinen yhteistyö, Microsoft Sharepoint

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

KMS: Knowledge Management System

MICU: Major and Institutional Client Unit

TRA: Theory of Reasoned Action

TPB: Theory of Planned Behavior

TAM: Technology Acceptance Model

UTAUT: Unified Theory of Acceptance and Use of Technology

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1. INTRODUCTION

Information systems (IS) implementations, among them Knowledge Management System (KMS) implementations, have an unfortunate tendency to burn in the bonfire of vanities or gradually fade into obscurity, in many cases due to unforeseen and unmanaged user resistance. User resistance leads into low usage levels of the implemented system, thus creating a managerial cul-de-sac as a priori perceptions of the benefits provided by the said system wildly exceed reality. An established fact within the IT industry is that about 70% of enterprise IS implementations fail, with ample research and commentary (TechRepublic, 2008, KPMG Survey, 2008, Kaur and Sengupta, 2011) corroborating the statement. As a result, there is an abundance of research discussing and measuring the reasons behind user acceptance, adoption and resistance of ISs. A distinctive feature of this stream of research is the focus on predicting user acceptance and intentions of usage prior to an IS implementation, while research delving into the situation developing after the implementation is much less common. Therefore attempting to discover the reasons and reasoning behind gradually developing issues of low user acceptance, adoption and increasing user resistance, accompanied with general disdain toward an implemented system, is plausible and topical.

1.1. Background for the research

The primary incentive for this study is an existing business issue in the major and institutional client department of a large financial services provider, where a knowledge management software (KMS) implementation aside a larger business model renewal begun in 2010 has not garnered sufficient momentum. The software in question is Microsoft's Sharepoint Server 2007, the most common enterprise content management and collaboration platform currently, used in 78% of Fortune 500 companies (ZDNet, 2011). As mentioned in the starting paragraph of this chapter, low user acceptance and adoption of a new information system is a widely known and researched issue, which quite unsurprisingly has manifested itself also in the context of this study.

The practical issue at hand lies in the initial organizational restructuring which was done in an effort to enhance the provision of a more comprehensive set of financial services to customers.

This meant the creation of expert offering teams, each with knowledge on their own particular offering area, an offering area manager and a client coordinator, led by a client manager. The structure and hierarchy of the organization in question will be further explained in chapter 4. The KMS in question was intended to streamline the co-operative efforts of the teams, promote well-documented business processes, reduce unnecessary emails and generally ease collaboration in building documents and sharing them. The whole unit is quite aware of the software in question, but maintains low usage levels due to reasons that are to be unfolded as this study progresses, legitimizing the practical need for this study. The management is concerned of the said low usage levels and wishes to take needed measures to ensure wider future adaptation of the KMS. Previous attempts at gathering the organization-wide opinion on the core issues concerning the usage of the KMS have however faded away after being initiated, most likely due to other pressing issues simply having higher priority over the KMS issue. This in turn justifies the usage of an external researcher devoted to discovering the topical issues of this particular case.

The issue for the organization seemingly lies in the fact that users fail to see the benefits that the software can bring to their daily work, possibly due to a lack of user involvement during the implementation phase and a lack of communication on the subject matter from top management. Lack of top management involvement and the lack of champions driving the system's usage are also plausible contributing factors. Whatever reasons will be found, the situation is nevertheless topical for the business unit's management, who wish for the problem to be mitigated in order to capture the full value of the KMS implemented.

1.2. Research question and objective of the research

The objective of this study is to find out underlying reasons and common constructs for how low levels of IS user acceptance, adoption and resistance form in an organizational single-case explanatory study context. Elaboration on the forming process of the study objective is presented in chapter 3. The research question will be as follows:

- Which factors primarily have an effect on individual users' attitude and behavior toward a Knowledge Management System and its usage?

As the study carried out will be qualitative due to the nature of the organizational issue in question, the objective is to be fulfilled mainly through semi-structured interviews in order to discover the explicit reasons for individuals' low IS acceptance, adoption and increased resistance. The interviews will be carried out only with individuals working in the organization in question, as all other parties are deemed exogenous to the research and its set scope. As these reasons unfold, these findings will be used to test the theoretical foundations of this research field and thus aim to further support the legitimacy of chosen studies. No new models or theoretical constructs will be proposed due to the practical and unique nature of the organizational issue at hand.

1.3. Structure of the study

The study will commence with a literature review of the topical research done in IS user acceptance, adoption and resistance, reaching from the 1980s to 2012. As this area of research is largely based on two influential behavioral models, the Theory of Reasoned Action and the Theory of Planned Behavior, they will be the first ones to be presented and discussed to provide the reader with a starting point on which to compare the later studies. The review will proceed in an approximate chronological fashion, approaching contemporary studies with more relevance to the case study discussed in the following chapters.

With the literary review as its antecedent, the methodology chapter will present the academic basis on how the research will be carried out, utilizing established knowledge on case study research. The research design will be discussed in-depth, and an insight into the processes followed in the data collection and analysis phases will be given. The purpose of the methodology chapter is to describe the reader the author's attempt to strive toward sufficient academic rigor throughout the research process. This will aid in sustaining a sufficient academic focus during the study, in order to avoid to succumbing to the pitfall of overt practicality.

The empirical study chapter will describe the case organization, the KMS in question and the results of the interviews which serve as the main source of data in this study. This chapter aims to depict the current state of affairs in the case organization, while the interview questions are

however formed in a way that allows data alignment with the chosen theoretical framework (Lapointe and Rivard, 2005) in chapter 5.

Finally, the findings and the discussion and conclusions chapters will discuss the discovered findings and attempt to mesh the accrued interview results into the chosen theoretical framework. Additionally, concrete managerial implications will be made in order to provide the reader with a connection to the actualities managers face when met with KMS implementation challenges.

2. LITERARY REVIEW

This chapter will provide an insight to the various theories and proposals concerning user acceptance, adoption and resistance of information systems, starting from the foundations of this area of research and proceeding chronologically toward more contemporary research topics. While the research area of user acceptance and adoption of ISs seems to be quite saturated, having reached a point where a Kuhnian paradigm shift could accelerate research and provide considerable benefits, the Technology Acceptance Model (Davis, 1989) still reigns over other models as the essential framework. However, the purpose of this chapter is not to revel on the current supremacy of the said model, but rather to present it as one major step in its research stream. As this chapter proceeds toward its end, topical research viewpoints will be introduced that support the subsequent case research chapters. Moreover, the latter studies presented in this chapter will increasingly focus on user resistance to information systems rather than on theories presenting predictive models of user IS acceptance and adoption. The reason behind the introduction of the acceptance and adoption research is due to its significant contribution to the concepts and viewpoints of the entire stream of the IS research relevant in the context of this study.

The IS research field has been studying the reasoning behind individuals' adoption of new information technologies since the late 1980's, developing into several streams of varying focus (Venkatesh et al., 2003). Venkatesh et al. (2003) argue that one stream of research uses intention or usage as a dependent variable, thus focusing on individual acceptance of technology (e.g. Compeau and Higgins, 1995; Davis, 1989), while another focuses on implementation success at the organizational level (e.g. Leonard-Barton and Deschamps, 1988) and task-technology fit (Goodhue, 1995), among others. Another view into IS research on individuals' adoption of new information technology and through that realizing its economic value is brought up by Wixom and Todd (2005), who claim that two dominant approaches exist in this domain. They state that the two research streams here are user satisfaction and technology acceptance, basing their statement on various studies on both streams (See Wixom and Todd, p. 85). However, despite the multitude of studies and opinions on the perceived dominance of various research streams, it is of paramount importance to notify the reader of the core building blocks on which the whole research stream on user acceptance and adoption of information technology is based on.

The origins of user behavior theory related to the use of information systems can be traced down to social psychology theories of human behavior, mainly the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1975) and the Theory of Planned Behavior (TPB) (Ajzen and Madden 1985). Before venturing on to the most influential model in user acceptance research, the Technology Acceptance Model (TAM) (Davis, 1989), a brief introduction to both the TRA and the TPB will be provided.

2.1. Theory of Reasoned Action

The theory of reasoned action is a creation of Ajzen and Fishbein (1975), born out of frustration with traditional attitude-behavior research, which was not able to provide sufficient correlations between attitude measures and performance of volitional behaviors – i.e. behaviors that are voluntary and necessarily involve conscious decision making (Hale et al., 2003). Bentler and Speckart (1979) argue that the aim of the TRA is to explain volitional behavior, and that its explanatory scope excludes a variety of behaviors that are, among others, spontaneous, impulsive, habitual, the result of cravings or simply scripted or mindless. In addition, they state that behaviors that require special skills or unique opportunities are left out of the model's scope. Simply put, the TRA deals with behaviors that can be defined as commonplace, voluntary and available for all actors.

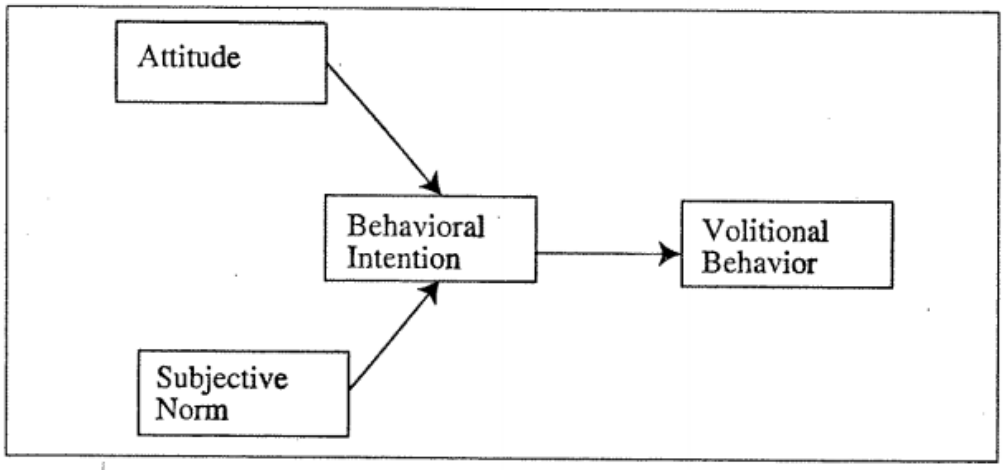

Figure 1: The components of the Theory of Reasoned Action (Ajzen and Fishbein, 1975)

The TRA's basic components are depicted in Figure 1 above, where Behavioral Intention (BI) is placed as the most important antecedent for volitional behavior. Hale et al. (2003) assert that behavioral intentions are thought to be the result of both an individual influence and a normative influence. The individual influence is a euphemism for the individual's attitude toward a certain volitional behavior, while normative behavior is referred in the original TRA as one's subjective norm. The TRA can be expressed as a simple mathematical function:

$$BI = A_B W_1 + (SN)W_2$$

BI stands for the behavioral intention, which is a function of both an individual's attitude (A_B) for performing a function and one's subjective norm (SN) related to performing the function. The Ws represent weights that are derived from empirical tests (Ajzen and Fishbein, 1975, Hale et al., 2003). Venkatesh et al. (2003) claim that the TRA is one of the most fundamental and influential theories of human behavior, and was successfully applied in IS research by Davis (1989) in his Technology Acceptance Model. The TRA also served as a basis for another fundamental theory explaining the behavior of individuals, the Theory of Planned Behavior.

2.2. Theory of Planned Behavior

The Theory of Planned Behavior was created by Ajzen (1985) as an extension to the TRA in order to explain non-volitional behaviors, i.e. behaviors influenced by beliefs regarding the possession of requisite resources and opportunities for performing a given behavior (Madden et al., 1992). The shortcoming of the TRA was the inability to explain individual non-volitional behavior, which undoubtedly constitutes a large part of an individual's behavior in various issues. As Madden et al. (1992) put it, the more resources and opportunities individuals think they possess, the greater should their behavioral control be over the situation – which makes intuitive sense and provided a fertile ground for confirmatory research on the topic.

Figure 2 depicts the addition of one component, perceived behavioral control, which has an indirect effect on behavioral intention (BI), and a direct effect on behavior. The indirect effect is based on the assumption that perceived behavioral control has motivational implications for

behavioral intentions (Madden et al., 1992). If an individual believes they have little control over performing the behavior due to a lack of resources, the individual's intention to perform the behavior can be low despite favorable attitudes or subjective norms for performing said behavior (Ajzen, 1985). Therefore, the confidence an individual has for performing any behavior is a significant factor in the final behavior. As for the direct effect of perceived behavioral control, it reflects the actual control an individual has over performing the behavior, and is significant when the behavior is not fully under volitional control and perceptions regarding control are accurate (Madden et al., 1992). The TPB is expressed mathematically as the following function:

$$BI = W_1 AB\,[(b)+(e)\,] + W_2\,SN\,[(n)+(m)\,] + W_3 PBC\,[(c)+(p)]$$

As can be seen, perceived behavioral control (PBC) is included with its own empirically derived weight (W_3). Additionally, the value of each component is directly proportional to component-specific indexes (Ajzen, 1985). Attitude toward behavior (AB) is multiplied with the sum of the strength of each salient belief (b) and the subjective evaluation (e) of the outcome, while subjective norm (SN) is multiplied with the sum of the strength of each normative belief (n) and the individual's motivation (m) to comply with the referent in question. Lastly, perception of behavioral control (PBC) is multiplied with the sum of control beliefs (c) and the perceived power of the control factor under consideration (p). The TPB can be applied to IS acceptance research due to the inclusion of PBC, as information systems are, unfortunately enough, implemented in many cases with a strong top-down focus, which can and most likely will have a detrimental effect on individuals' PBC index's factors (c) and (p).

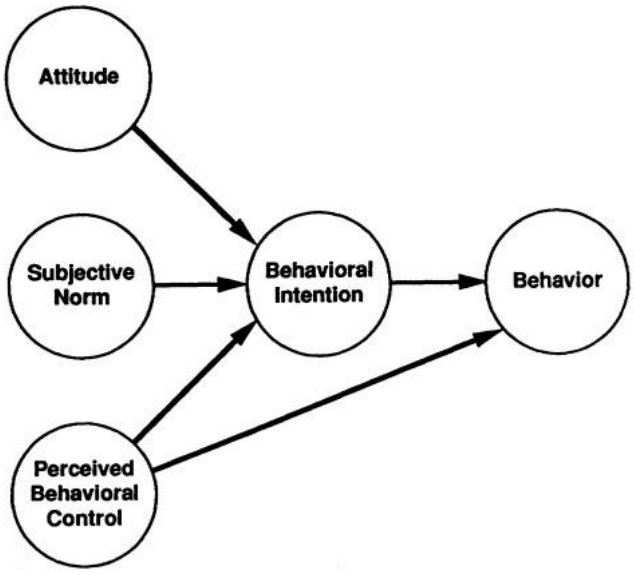

Figure 2: The components of the Theory of Planned Behavior (Ajzen, 1985)

2.3. The Technology Acceptance Model (TAM) and its variations

As the number of failed IS implementations grew rapidly during the 1970's and 1980's, the research area of predicting system use rose in popularity among researchers (Chuttur, 2009). Due to the failures of previous studies to produce reliable measures for explaining system acceptance or rejection (Davis, 1989), Fred Davis proposed the TAM in his doctoral thesis at the MIT Sloan School of Management. Being able to produce statistically significant results, the model eventually became the definitive study in the aforementioned research area. The following subtopics will proceed to describe TAM and the variations created to extend the scope of explainable phenomena.

2.3.1. The Technology Acceptance Model

The TAM predicts actual system usage through the interplay of three components, perceived usefulness, perceived ease of use and attitude toward using. Davis (1989, p. 320) describes perceived usefulness as *"the degree to which a person believes that using a particular system would enhance his or her job performance"*, i.e. a user believes that a positive use-performance relationship will exist. Davis (ibid.) continues describing perceived ease of use as *"the degree to which a person believes that using a particular system is free of effort"*, which logically leads to the assumption that a system that it easier to use will evoke more usage than a system that is counterintuitive and difficult to comprehend.

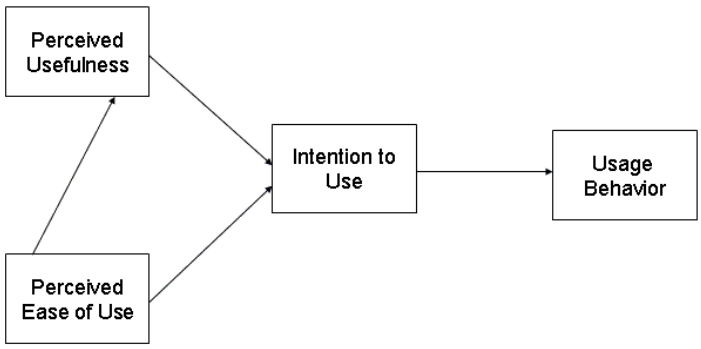

Figure 3: The components of the Technology Acceptance Model (http://www.westga.edu/~distance/ojdla/spring61/Image98.gif)

As depicted in Figure 3, an individual's intention to use is determined by both of the previously described components. Additionally, the prominence of perceived usefulness over perceived ease of use, depicted with the one-way arrow, is an important notion for developers and designers who tend to overemphasize ease of use over usefulness (ibid.). Users have a tendency of tolerating some level of difficulty in using a system that is very useful for them, but do not stand any difficulty if the system does not present any kind of benefit. As Davis (ibid.) argues, a chain of causality exists: ease of usage → usefulness → usage.

An ISI Web of Knowledge query for Davis' original 1989 article proposing the TAM returns a citation count of 3367 (date of query: 12.9.2012), which reinforces the fact that it is indeed immensely popular in IS research, and that the said research area using the TAM most likely has already reached a saturation point. As stated in the introductory paragraph of this chapter, the creation of a new theory striving to explain user acceptance could prove to be valuable for user acceptance research. The model has also sparked criticism claiming that it lacks sufficient rigor and relevance to make it a well-established theory for the IS community (Chuttur, 2009). A variety of studies (Legris et al., 2003, Lee et al., 2003, Bagozzi, R.P., 2007) have discussed a selection of limitations of the TAM, pointing out issues in the methodology used in testing it, the variables and relationships present in the model and its theoretical foundation. The three limitation areas will be briefly discussed under the following subtopics.

Methodology used for testing

A common criticism on the studies of the TAM model is the issue that the data used to measure system usage is based on self-reported usage and not actual usage (Legris et al., 2003). The data hence is based on subjective perceptions of how much the system is actually used, and is unreliable in measuring actual usage. Despite these notions, many studies rely on self-reported usage data (Chuttur, 2009). Another intriguing point is made by Lee et al.(2003) who argue that the majority of studies use the TAM in predicting the voluntary usage of systems, while few studies considered systems that were for mandatory use. They (ibid.) further point out that especially in an organizational context, system usage rarely is voluntary and only one system is available for a certain purpose. Especially the latter viewpoint is worthy of more consideration, as the TAM is frequently applied in organizational contexts, where perceived usefulness can be

taken as granted and the significance of perceived ease of use may and most likely will be more prominent.

Variables and relationships of the TAM

The basis of the TAM is that perceived usefulness and perceived ease of use mediate external environmental factors such as training and education and user involvement in design when predicting actual usage behavior (Davis, 1989). However, Burton-Jones and Hubona in their 2006 study obtained results which showed that some external factors may have a direct influence on system usage, rather than initially influencing either of the two primary components of the TAM. They point out factors such as system experience and age, which do appear to be plausible factors for having a direct influence on system usage. It is a commonly accepted fact, also outside IS research, that age does indeed play a major role when discussing IS acceptance and adoption. Yang and Yoo (2003) criticized the TAM on not including attitude as a variable, as they believed it is a major factor to be considered. They found out in their study that the effect of cognitive attitude, one of the two attitude variables coined in their study, showed strong statistical significance in predicting actual usage.

The theoretical foundation of the TAM

Bagozzi's 2007 study *The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift* was a firm proponent of a paradigm shift in the technology acceptance research, and deemed the TAM unfit for explaining and predicting system use. Bagozzi claimed (ibid.) that the antecedent of actual usage in the TAM, intention to use, is not representative enough of actual use, because the time period between intention and adoption could be full of uncertainties and other factors, that might influence an individual's decision to adopt a technology. He also made an important remark (ibid.) of the TAM claiming that an individual's act was assumed to be completely determined by his or her intention to act. Contrary to this, Bagozzi argued that an individual's own evaluation and reflection on his intention can play a role in directing its change or to even take a completely different course of action.

2.3.2. The Technology Acceptance Model 2

Davis and Venkatesh (2000) provided an extension to the original TAM by adding seven theoretical constructs that span social influence processes (subjective norm, voluntariness, experience and image) and cognitive instrumental processes (job relevance, output quality and result demonstrability). They argued (ibid.) that three of the social influence processes have an effect on an individual facing the opportunity to adopt or reject a new system, in other words contemplating on its perceived usefulness. On the other hand, experience incrementally removes the effect of normative (outside) influence on an individual's usage intentions. Davis and Venkatesh described the cognitive instrumental processes as determinants of perceived usefulness, i.e. the three components are factors in the cognitive comparison process of judging what the system is capable of doing with what needs to be done in one's job.

An interesting feature in TAM2 is the addition of subjective norm, which originates from the TRA, the forefather of user acceptance research. Davis and Venkatesh (2000) argue that subjective norm significantly influenced perceived usefulness via two factors, internalization and identification. The term internalization stands for the process of people incorporating social influences into their own usefulness perceptions, and identification is a term for people using a system to gain status and influence within the work group and thereby improving their work performance (ibid.). What makes the inclusion of the subjective norm interesting is the fact that while social influence does play a major role in whether individuals accept a system or not, it was excluded from the original TAM. One might ponder upon the original intentions behind the exclusion. Moreover, the authors make a related and valuable notion on the importance of social influence: They state that *"mandatory, compliance-based approaches to introducing new systems appear to be less effective over time than the use of social influence to target positive changes in perceived usefulness."* This seemingly obvious contribution is seldom thought of when implementing novel information systems into organizations with a top-down approach, of which the industry average of seven failed implementations in ten attempts speaks the undisputable truth.

2.3.3. The Unified Theory of Acceptance and Use of Technology (UTAUT)

The chapter on the TAM and its offspring will be concluded with the presentation of the final extension of the original model and a brief insight into where this specific research area might be headed in the future.

Venkatesh et al. (2003) set out to create the UTAUT on the premise that multiple prominent and competing user acceptance models were focused on different sets of acceptance determinants. Thus forming a synthesis of the said models was a plausible course of action, which resulted in a model that integrated eight of the most popular ones. As mentioned in the opening paragraphs of this chapter, many research streams exist inside IS research of how and why individuals adopt new information technologies. However, the UTAUT focuses on integrating models which have employed intention and/or usage as the key dependent variable (ibid.) Figure 4 clarifies the basic concept of these models.

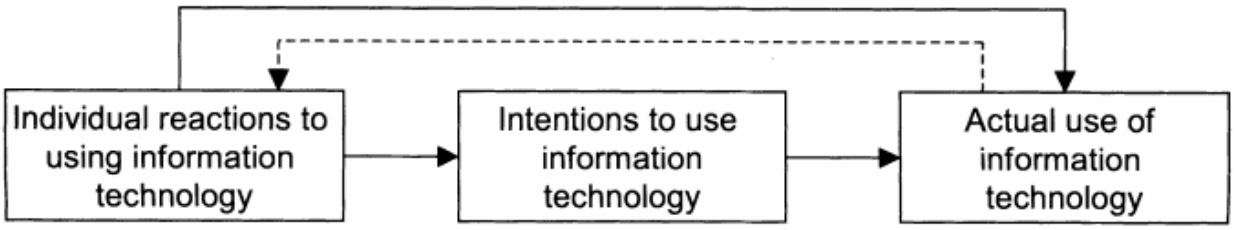

Figure 4: Basic concept underlying user acceptance models (Venkatesh et al., 2003)

Venkatesh et al. (ibid.) summarized the preceding models by theorizing four constructs to be direct determinants of user acceptance and usage behavior: *performance expectancy, effort expectancy, social influence* and *facilitating conditions*. Similarities to TAM2 can be drawn from the *social influence* component, TAM and TAM2 both deal with perceived usefulness which is akin to *performance expectancy*, TPB's perceived behavioral control matches the *facilitating conditions* component and lastly TAM and TAM2 capture the concept of *effort expectancy*. Other similar conceptualizations integrated into the UTAUT were mentioned by Venkatesh et al. (ibid.), but were omitted from this paragraph as they play no significant part in this particular study.

Bagozzi (2007) went on to criticize the UTAUT, describing it as *"a patchwork of many largely unintegrated and uncoordinated abridgements"*. To support his argument, he refers to the multitude of independent variables for predicting intentions and behavior presented in Venkatesh et al.'s study (2003), 41 and 8 respectively, which he claims is merely misleading piecemeal evidence of technology acceptance behavior. In order to clarify the difference between said independent variables and the concepts included in the UTAUT: Venkatesh et al. (ibid.) present independent variables such as gender * age or social influence * voluntariness, which explained very little of the variance when compared to the concepts chosen into the UTAUT model.

However, Bagozzi (2007) does indeed bring forth a valid point worth contemplating in regard to the TRA/TPB/TAM based research in general. Based on observations of said studies, there seems to be considerable hardship in finding a common consensus on what the direct and indirect determinants of behavioral intentions and actual behavior are. Additionally, IS research based on the TAM seems to have reached a certain saturation point. Benbasat and Barki (2007) point out a valid reason for this, as remaining within the confines of a dominating paradigm facilitates achieving the justification for academic investigation, while hampering new discoveries in the field. Following the lines of Kuhnian paradigm thinking, user acceptance research utilizing the TAM is in a stable normal science period, while studies attempting to debunk its position as the definitive model starting to appear (Lapointe and Rivard, 2005; 2007). Continuing with Kuhnian terms, this could lead into a scientific crisis later on and providing revolutionary views to user acceptance theory.

2.3.4. The Future of IS Adoption and Acceptance Research

Benbasat and Barki (2007) make several recommendations on how to take IS adoption and acceptance literature beyond the TAM. These include shifting research focus back to its origins: to the TRA or more preferably the TPB in order to provide a fresh view of the left hand side of the acceptance models by giving less attention to the bedrock perceived usefulness and perceived ease of use antecedents. Another interesting viewpoint the authors (ibid) bring forth is the need of reassessing the outcome variable of actual usage, as in the case of mandatory, organizational usage the previous models fail to represent usage comprehensively due the variable's focus on the amount of usage. In mandatory settings, the system has to be used in any case. Therefore they

propose that the conceptualization of usage should be developed in order to capture user learning, adaptation and reinvention behaviors resulting from system use. Benbasat and Barki also discuss the importance of longitudinal, multi-stage studies, which can capture the influence of the variables used over an extended period of time. Lapointe and Rivard (2005) reinforce this notion with their longitudinal study on changing user acceptance behavior in a healthcare context. This viewpoint is indeed a worthy argument, as user acceptance research that focuses only on predicting pre-implementation behavior is not sufficient, as human nature guarantees fluid and changing opinions across longer periods.

Conclusively, as Benbasat and Barki (2007) argue, the key problem with the TAM and its variants is that it provides a bridge to antecedents and consequences of IS user acceptance and adoption, but has instead become a means to an end itself. The authors (ibid) claim *"the dominance of the TAM has caused a high degree of enforcement, conformity and lack of innovation that have not served the IT adoption research community well"*. Due to the aforementioned reasons, the IS acceptance literature reviewed in the following subtopics will focus on more contemporary viewpoints, separating them from the slightly dogmatic TAM-focused research. As this literature review proceeds, the focus will shift toward studies that can be deemed more relevant concerning the business case focus of this study.

2.4. Theoretical Model of Cognition Change

As discussed previously, preceding studies in IS acceptance and adoption research have paid little attention to longer-term changes of user behavior concerning information systems. Therefore Bhattacherjee and Premkumar's 2004 study "Understanding Changes in Belief and Attitude Toward Information Technology Usage: A Theoretical Model and Longitudinal Test" provides a fresh outlook on the subject matter. They argue that even as user beliefs and attitudes are key perceptions driving information technology usage, they might very well change with time through experience, changing usage behavior. This study also served as a basis for Benbasat and Barki's (2007) claims of additional research needed on adoption and usage behaviors over extended periods.

Despite taking steps away from the TAM by attempting to explain temporal changes in users' beliefs and attitude, Bhattacherjee and Premkumar (2004) make no attempt to disagree with it

and other prior studies by indeed focusing on perceived usefulness and attitude as the concepts explaining initial IT usage and long-term usage intention and behavior. Changes in these determinants *"will likely have a corresponding impact on, and may even reverse, users' continuance intention and behavior*" (ibid, p. 230).

As Figure 5 depicts, Bhattacherjee and Premkumar (ibid) argue that user beliefs and attitude change with time due to two novel constructs, disconfirmation and satisfaction. These constructs were taken from Oliver's (1980) expectation-disconfirmation theory (EDT), which however will not be elaborated on due to its irrelevance to the subject matter. Disconfirmation stands for the difference between users' original expectations and observed performance of a system, having an effect on users' satisfaction and modified beliefs (ibid). Satisfaction is posited as having effect on users' attitude toward a system. The authors' contribution to IS acceptance literature is relatively straightforward and comprehensible, as the suggested model brings about a different viewpoint of future intention changing according to positive or negative disconfirmation and changes in satisfaction. Bhattacherjee and Premkumar (2004) base their theory of these two mediating constructs on Helson's (1964) adaption level theory, which posits that individuals perceive new stimuli, which in turn cause deviations from existing cognitions.

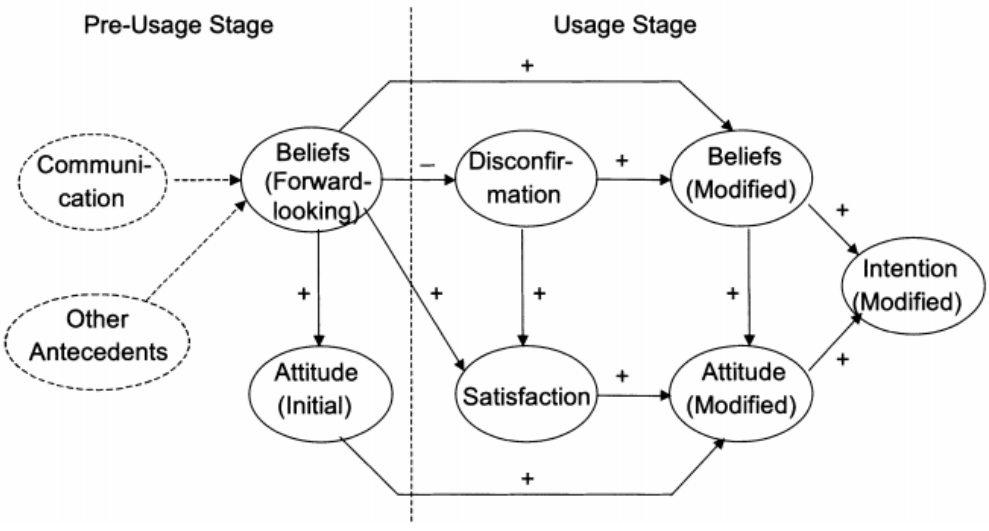

Figure 5: A Two-Stage Theoretical Model of Cognition Change (Bhattacherjee and Premkumar, 2004)

Bhattacherjee and Premkumar (2004) also posit that with time, the effects of disconfirmation and attitude become less significant as users' beliefs and attitude about the system stabilize and become more realistic. Thus changes in usage behavior are believed to change substantially more during the initial phase of usage, immediately after moving from the pre-usage stage to usage stage. To provide a brief, practice-oriented viewpoint on this postulation, it is appropriate to refer to the business case that provides the background for this study: The knowledge management (KM) system implemented was a part of a larger business model restructuring, which initially caused widespread confusion within the organization. The KM system's organization-wide and business process supporting usage appears to have been insufficiently planned, and resulted in low usage levels. As the organization is currently struggling with the issue of rekindling the system's usage, it is fair to state that Bhattacherjee and Premkumar's (ibid) postulation will be corroborated if the data provides sufficient supporting evidence. The users initially seem to have accustomed to not using the KM system, and appear to be quite resistant against attempts promoting added usage.

2.5. Multilevel Model of Resistance to IT Implementation

As all other models presented in this study this far have discussed varied viewpoints on predicting user IS acceptance and adoption, it is necessary to also include studies which have focused on resistance itself as the focal point. As empirical evidence proves, a myriad of IS implementations fail despite efforts in gaining organization-wide acceptance for the new IS prior to the actual implementation. This lack of research is also pointed out by the authors of the study discussed in this subtopic, as Lapointe and Rivard (2005) claim that only four studies before their study have proposed theoretical explanations of how and why resistance occurs. Lapointe and Rivard mention early in their study that their goal is to *"shed light on the multilevel and evolutionary nature of the resistance phenomenon"* (p. 462), from which a loose connection can be made to research focusing on user cognitions changing over time (Bhattacherjee and Premkumar, 2004, Beaudry and Pinsonneault, 2005). As users' cognitions on the perceived usefulness of a system change temporally, resistance behavior most likely varies too. Additionally, Lapointe and Rivard's study (2005) also posits that resistance phenomena can be

studied at both individual and group levels, while most prior research has focused on individual behavior.

The authors (ibid), curiously enough, define resistance via semantic analysis and identify five common concepts, or primitives as coined by the authors, that repeatedly arose from used source material: resistance behaviors, object of resistance, perceived threats, initial conditions and subject of resistance. Resistance behaviors are described to reach from passively uncooperative to engaging in physically destructive behavior, while the object of resistance is argued to be the very thing that is resisted, i.e. "the content of what is being resisted" (ibid). Perceived threats are characterized as being something that users perceive as being brought by the change, as people do not resist change in itself. As for initial conditions, some users can perceive a system as a threat due to e.g. changes in the distribution of power or established routines. Lastly, subject of resistance simply defines the entity that adopts resistance behaviors, be it an individual or a group (Lapointe and Rivard, 2005). As Figure 6 depicts, these primitives were then used in the multilevel model in order to understand the process of individual level resistance behaviors developing into group level behaviors over time:

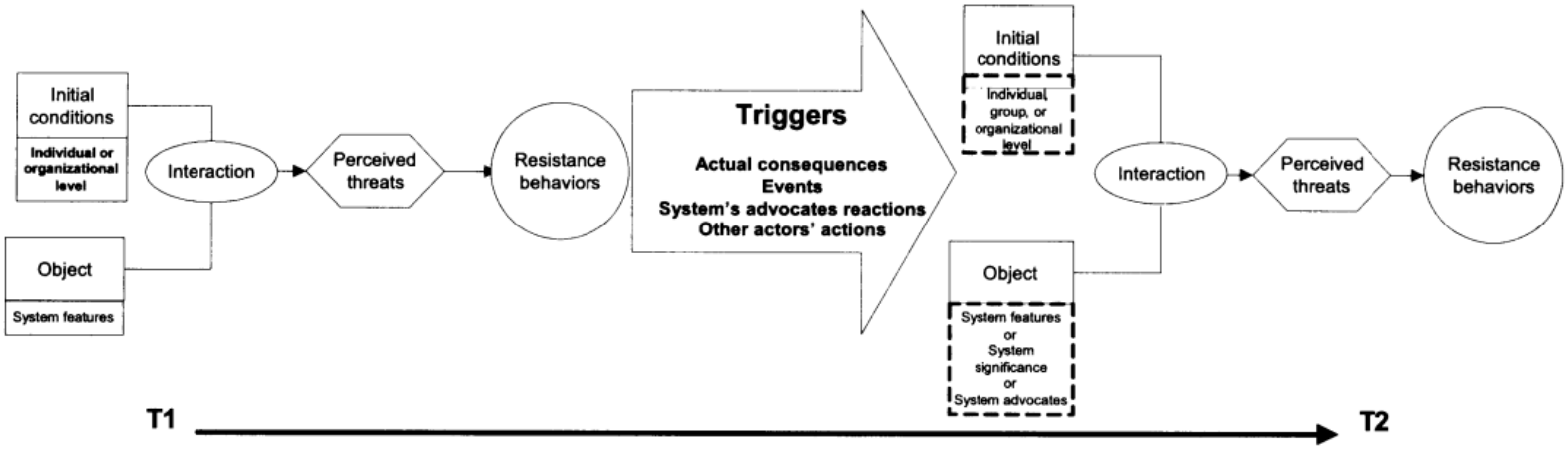

Figure 6: Resistance to IT Implementation: A Longitudinal Perspective (Lapointe and Rivard, 2005)

Lapointe and Rivard (ibid) argue that via the interplay of relevant initial conditions and an object of resistance, perceived threats are formed, which then leads to resistance behaviors. What makes this model worthy of attention is the theorized trigger construct, which is the antecedent to group resistance behaviors. These triggers are hypothesized to modify the set of initial conditions or the

object of resistance due to the reasons listed in Figure 6, resulting in a cascading set of changes in behaviors proceeding from individual level to organizational or group levels. The authors (ibid) provide an example of this from their case study on a hospital IS implementation: A perceived threat of "reorganization of work" materialized as a result of actual system usage, functioning as a trigger which changed the initial conditions of the next phase in the development of the situation with time. Eventually, through different realizations of perceived threats and various events, the situation escalated into group-wide aggressive resistance of the IS. Contrary to various other theories that strive to predict system usage levels via static models, this time-dependent approach indeed is a valuable contribution to the subject matter of IS acceptance and resistance.

Lastly, Lapointe and Rivard (ibid) introduce two terms for explaining the emergence of group resistance behaviors from individual behaviors, coined as either the process of composition or compilation. The composition process takes place when multiple individuals share common perceptions, while the compilation process emerges when individuals hold various and differing resistance behaviors on a unit level. Figure 7 depicts these processes. This process of resistance behavior emergence is relevant to IS resistance research as it provides fertile ground for researchers to e.g. focus attention on specifying triggers which result in composite group resistance behaviors, escalating situations into more problematic and complicated areas.

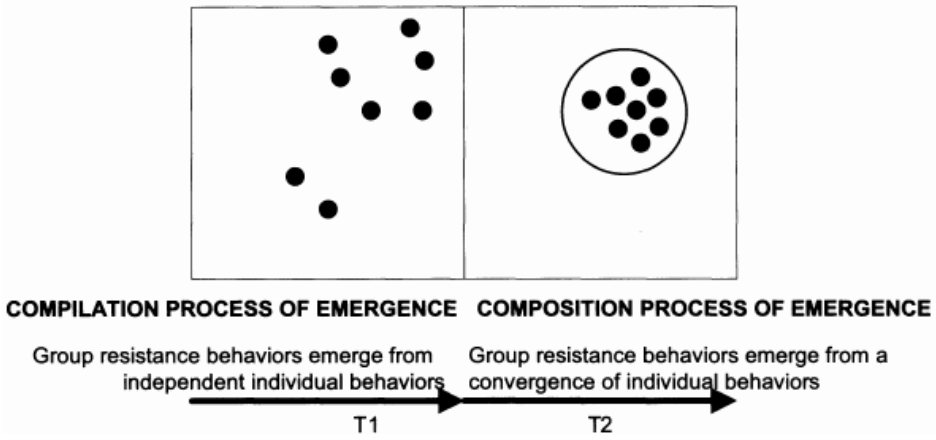

Figure 7: Group resistance behaviors (Lapointe and Rivard, 2005)

2.6. A Coping Model of User Adaptation (CMUA)

Bearing similarity to Lapointe and Rivard's (2005) multilevel model, Beaudry and Pinsonneault's (2005) CMUA is also based on the temporality of individuals' behavior toward information systems. However, the CMUA does not discuss resistance as the main point of interest, but rather introduces users' adaptation to changes in information systems as the viewpoint. Four adaptation strategies are identified: benefits maximizing, benefits satisficing, disturbance handling and self-preservation (ibid). The whole process of adaptation is coined as "coping" on the basis of prior research, which then consists of two phases: Individual appraisal of a situation and coping efforts done according to one's perceptions (ibid).

The influence of the Theory of Planned Behavior (Ajzen, 1985) and the Technology Acceptance Model (Davis, 1989) are plainly in sight, as individual appraisal can be seen as a direct descendant of the original constructs such as subjective norm (TPB), attitude (TPB), perceived behavioral control (TPB) and perceived usefulness (TAM). Beaudry and Pinsonneault's (ibid) elaboration of the two types of coping efforts sheds light on how individuals react to changing IS situations: Problem-focused coping aims at managing the disruptive issue itself, while emotion-focused coping changes one's perception of the situation, but brings no changes into the predicament. Basing on these arguments, it is plausible to assume that organizational resistance is often a result of emotion-focused coping, as user perceptions are at the core (Davis, 1989, Bhattacherjee and Premkumar, 2004) of current and future system usage. Furthermore, Beaudry and Pinsonneault (2005) state that emotion-focused coping occurs mainly when individuals feel that they have limited control over a situation, which is unfortunately a given in many real-life examples of organizational IS resistance.

As Beaudry and Pinsonneault (ibid) argue, the adaptation process is highly iterative and continually evolves according to changes in the individual's environment. This notion is of paramount importance, as it helps the model's utilizers to account for positive or negative behavioral spirals – bearing much resemblance to the trigger -> perceived threat -> behavior cycle of Lapointe and Rivard's (2005) multilevel model. Herein also lies the main contribution of Beaudry and Pinsonneault's (2005) work, as this model provides a practical framework upon

which to segment different adaptation behaviors, create appropriate responses to individual behaviors and avoid said behaviors' transformation into resistance behaviors.

2.7. An Integrative Model of User Satisfaction and Technology Acceptance

Wixom and Todd's 2005 study aiming to integrate user satisfaction research with the abundantly discussed technology acceptance research will serve as the final study of this particular area in this literature review. This study was chosen not only for its individual contributions, but also to depict the general direction of user acceptance research, which appears to aims toward a more integrative approach to the various studies of the field in order to provide a more unified view of the subject area.

Wixom and Todd (ibid) lay the foundations of their proposed model on the differences between the two research areas: User satisfaction research focuses on the system and design attributes (e.g. system reliability, information accuracy) which supports system design but does not attempt to predict actual system usage – where technology acceptance literature then excels (Davis, 1989). Hence integrating the two makes intuitive sense, enabling effective appraisal of system design prior to implementation, added with predictive capabilities regarding actual system usage. The model Wixom and Todd proposed was the following:

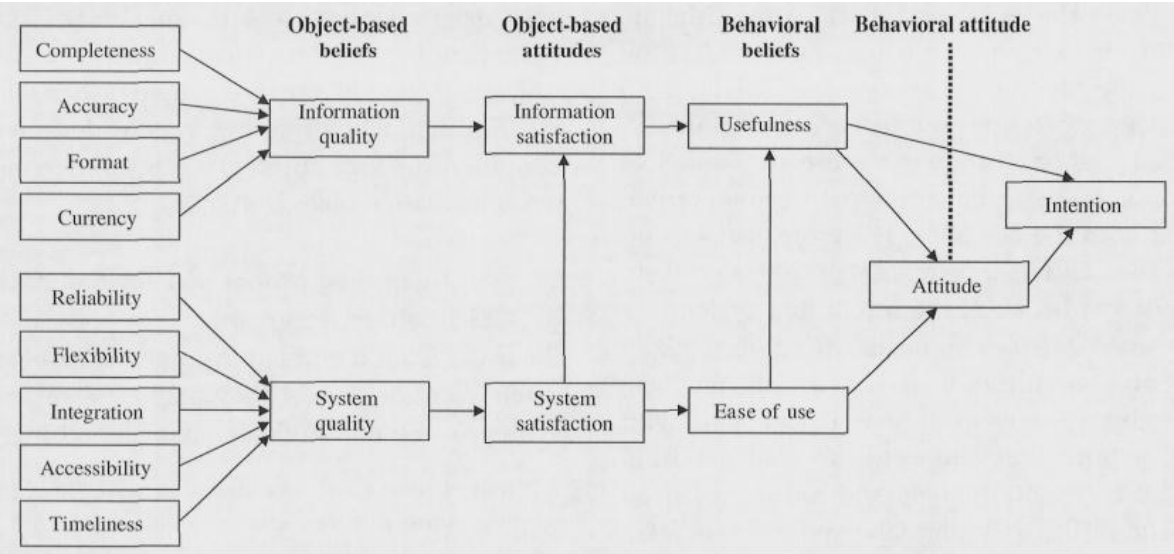

Figure 8: The Proposed Integrated Model (Wixom and Todd, 2005)

In coherence with the TAM (Davis, 1989), all constructs of the model play a role in predicting actual usage. What sets this model apart from others is the inclusion of the antecedents of the well-known constructs of usefulness and ease of use, the object-based beliefs and attitudes. These beliefs and attitudes spring from the actual system and design attributes identified by user satisfaction literature (Wixom and Todd, 2005, p. 88), hence the added "object-" prefix (Wixom and Todd, 2005). As the causal chain from the underlying attributes to usage intention is quite clear regarding the constructs and their connections, no further elaborations can be deemed to be useful. However, the authors' (ibid) identification of the nine attributes affecting object-based beliefs gives a valuable contribution to the research area in question, as it allows managers to pinpoint the features (attributes) that are the most significant in their own organization, or similarly, justify needed changes to certain features in the case of low system usage and possible resistance.

The ISI Web of Knowledge citation count of 233 of Wixom and Todd's (ibid) study in question gives reason to believe that the integrative model was well received, with research citing Wixom and Todd as late as September 2012 (Udo, G. et al., 2012). Even though the integrative model is still caught up in the confines of a TAM-dominated mindset, it does provide the research stream with a novel direction, from which entirely new approaches may be found via future iterations.

2.8. The Status Quo Bias Perspective to User Resistance

Kim and Kankanhalli's (2009) study is a worthy addition to the user resistance literature and introduces a very topical concept, the status quo bias. This concept is especially important in regard as to how the phenomenon of user resistance to information systems usually manifests itself in organizations. Kim and Kankanhalli (ibid) state that "*user resistance can be due to bias or preference to stay with the current situation*", and that the status quo bias has been missed in explaining user decision making when information systems are concerned. To support this statement, they provide five studies, four of which are the same as Lapointe and Rivard used in their 2005 study discussed earlier and the last one being Lapointe and Rivard's study.

The authors (2009) use Samuelson and Zeckhauser's (1988) classification of status quo bias explanations into three categories: rational decision making, cognitive misperceptions and psychological commitment. These three categories serve as the three main constructs of their

framework, which will be elaborated on later in this chapter. Samuelson and Zeckhauser (ibid) describe rational decision making as an assessment of relative costs and benefits of change before making a switch to a new alternative. These costs are further divided into two types, transition costs and uncertainty costs, which can also be coined as switching costs, a more widely known concept. Transition costs are simply costs incurred when adapting into a new situation. Uncertainty costs represent the psychological uncertainty or perception or risk associated with the new alternative, providing a loose connection to the TAM's (Davis, 1989) perceived usefulness construct. Cognitive misperception bears its foundations in psychology, as this construct fundamentally stands for loss aversion – losses loom larger than gains in value perception (Kahneman and Tversky, 1979). Hence status quo bias may be a result of this misperception, if users perceive the changes brought on by an IS to result in any losses. The last construct, psychological commitment is also divided, here into three types: sunk cost, social norms and efforts to feel in control. Sunk costs refer to skills related to a previous way of working that are lost with a new IS implementation, social norms refer to an organization's culture and way of working, e.g. a co-worker's opinion might have a significant effect on an individual's status quo bias. Lastly, efforts to feel in control result from individuals' innate need to remain in full control of their own situation (Samuelson and Zeckhauser, 1988), to which a new IS might bring changes and hence affect one's status quo bias.

Kim and Kankanhalli's (2009) effort in creating a model that combines their own theorizing on the status quo bias with the constructs of previous technology acceptance research and the equity-implementation model (Joshi, 1991) results in the proverbial maze of dependencies and causalities. However, a written explanation of it would be of little use, and thus Figure 9 depicts the framework and how the concept of status quo bias complements previous research. As can be seen, yet again technology acceptance research provides the fundamental principles by which the issue at hand is analyzed; in this case the Theory of Planned Behavior (Ajzen, 1985). What is important here is the inclusion of the status quo bias and its effect on the constructs of technology acceptance literature and hence on user resistance. Kim and Kankanhalli (2009) point out the high significance of users' high switching costs in relation to a growing status quo bias. Therefore the one of the main contributions of this study is the introduction of a completely new viewpoint on the reasons of how user resistance forms, which can help managers in focusing their efforts when selling the benefits of a new IS for future users.

This study is also quite topical in the context of the case study that is the focus of this very research, as the users in the organization under scrutiny possibly have trouble seeing the benefits brought by the already implemented system, and most likely see it merely as an increase in their documentation work. Therefore especially the psychological commitment construct, along with the rational decision making construct can possibly play a significant role when analyzing and identifying the exact reasons behind their resistance behaviors.

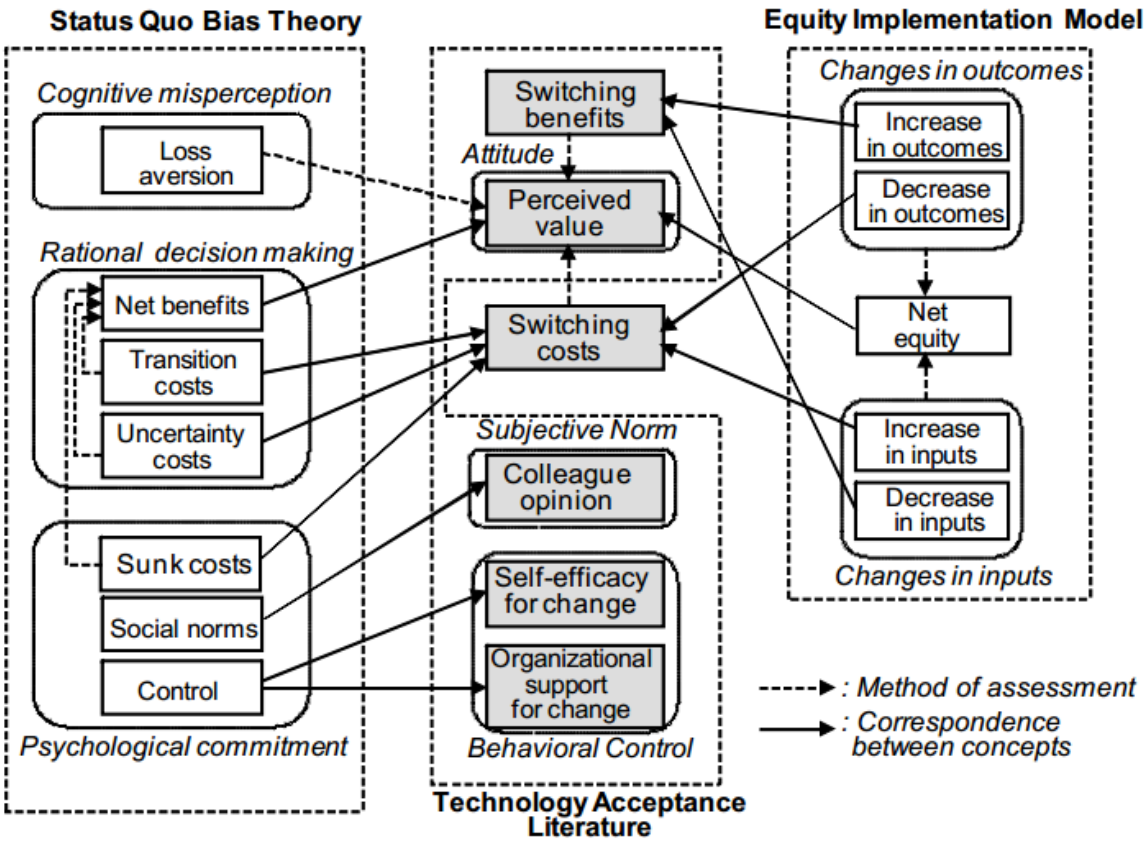

Figure 9: The Integrative Framework (Kim and Kankanhalli, 2009)

2.9. Cynicism as User Resistance in IT Implementation

The final study introduced in this chapter presents an intriguing viewpoint into how organizational user resistance behaviors can be classified, as cynicism as a form of resistance has not been discussed in any previous literature. Selander and Hendfridsson's 2012 study "Cynicism as User Resistance in IT Implementation" makes use of Lapointe and Rivard's (2009) study on the multilevel nature of IT resistance, with the addition of said cynicism, which also most likely is a common form of resistance in the organization presented in the case study part of this research. Selander and Henfridsson (2012) see user resistance as a temporal phenomenon, which seems to represent the contemporary consensus among the IS acceptance, adoption and resistance research community, as opposed to the earlier, static models created for predicting usage intention and user resistance. Moreover, no mention the TAM is made in Selander and Henfridsson's (ibid) study, which also can possibly be seen as a harbinger of the gradually reducing influence of the model on research in this subject matter.

Selander and Henfridsson (ibid) tie Lapointe and Rivard's (2009) multilevel model with management literature focused on cynicism and how it influences employees' intentions to resist change. User cynicism is hence dubbed as "*cognitively distanced resistance that constitutes negative affect towards the IT implementation and manifests a perception of seeing through the espoused goals of the implementers*" (Selander and Henfridsson, 2012). According to this definition, the authors separate user cynicism into three dimensions: cognitive distancing, negative affect and seeing through espoused claims of management. Cognitive distancing is described as to result in individuals creating "resistance spaces", in which they can then preserve their sense of self and autonomy – i.e. distancing oneself from the management. Negative affect on the other hand stands for a selection of behaviors directed toward managerial behavior, such as irony, sarcasm and mockery, which in turn result from a wide range of negative affect including defeatism, betrayal and disillusionment (Selander and Henfridsson, 2012). The final dimension, seeing through espoused claims of management, is explained as a "*perceived awareness of what is really going on*". Thus in these cases individuals perceive that their own comprehension of the implementation situation is on a better level than what the management has, therefore behaving as if they are outside of and not affected by organizational norms and values. (Selander and Henfridsson, 2012)

As mentioned, the inclusion of cynicism as a form of resistance is indeed refreshing, and at first glance bears much semblance to the issue at hand in the case study organization of this research. As resistance does not necessarily manifest itself in overtly conspicuous forms, concepts such as cynicism and apathy toward a system (Lapointe and Rivard, 2005) inherently ring true as common resistance behaviors. Selander and Henfridsson (2012) discuss how individuals cognitively distance themselves from a system that they perceive as unbeneficial for themselves, which in a Knowledge Management System (KMS) perspective can prove to be very true, as a common problem with KMS implementations is simply the lack of use due to various reasons. This cognitive distancing will be discussed later on as a manifestation of user resistance in the case organization.

2.10. Conclusions on the literary review

This literature review has looked into a vast collection of different studies on both user acceptance and user resistance literature, providing a theoretical basis on which to base assumptions and observations later on. The studies presented were the following: Theory of Reasoned Action, Theory of Planned Behavior, the Technology Acceptance Model and its direct variations, the Theoretical Model of Cognition Change, the Multilevel Model of Resistance, the Coping Model of User Adaption, the Integrated Model of User Satisfaction and Technology Acceptance, the Status Quo Bias theory and lastly a possible indicator of the future direction user resistance research, the Cynicism viewpoint on resistance.

Even though the number of presented studies may seem superfluous, it is deemed necessary in order to sufficiently present the variety of viewpoints and research topics in the area of user acceptance, adoption and resistance research. This is also indicative of the dispersion of opinions within the research fields, as only one model has attained a dominant position. As discussed quite a few times in the preceding subchapters, the TAM (Davis, 1989) holds the throne as the most cited and most verified study in this area, but will not be used in this research as a reference point due to this exact reason. Confirming the findings of Davis' (ibid) model will present no tangible benefits to any stakeholder group, and thus the following chapters will hold other studies as their theoretical basis. As the practical issue at hand is more relevant from the user resistance viewpoint than from the user IS acceptance viewpoint, Lapointe and Rivard's (2005)

and Selander and Henfridsson's (2012) studies on the trigger-influenced, temporal nature of user resistance will be utilized as the academic basis upon which to lean on when building interview questions and during data analysis. Kim and Kankanhalli's (2009) study on the status quo bias perspective will also be used as a reference point when forming interview questions, in order to bring in a varying viewpoint and to ensure unbiased analysis of the gathered data. In order to include user acceptance and adoption research into the analysis as well, rather than only provide information on it only due to its contribution to the fundamentals of both of the research topics, Bhattacherjee and Premkumar's (2004) study of temporal cognition change was used as source material for interview questions.

3. METHODOLOGY

This chapter will describe and justify the chosen research methodology which this research follows, providing an insight as to how a single-case explanatory case study is generally carried out. Yin (2009) argues that case studies are the preferred method when 1) "how" or "why" questions are being posed, 2) the investigator has little control over events, and 3) the focus is on a contemporary phenomenon within a real-life context. All of these statements hold true in this case: As the research question states, the focus of this study is on finding the reasons behind low levels of user acceptance, adoption and resistance of an information system. Additionally, the author has no control over the events in the case organization, and the issue at hand is a unique, current and ongoing event. Therefore the decision to carry out the research in the form of a case study is strongly corroborated by commonly accepted theory. Additionally, Yin (ibid) gives five rationales for using a single-case design, one of them being the uniqueness of the study. Considering that the case focuses on one unit of one company, it can well be dubbed as being unique. Yin's 2009 book "*Case Study Research: Design and Methods*" is used as the main reference on how to carry out such a study, as other sources refer largely to it (Davison, 2011).

3.1. Research design

Yin (ibid) defines research design as "*the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions*" (p. 29). The actions included in the steps leading into the conclusions will be further explained in the following subchapters 3.2. and 3.3. Yin (ibid) identified five important components of research design, which will form the outline of the design of this study. The components are as follows:

i. *A study's questions*
ii. *its propositions, if any*
iii. *its unit(s) of analysis*
iv. *the logic linking the data to the propositions*
v. *the criteria for interpreting the findings.*

Each of these components will be elaborated on next, starting with i):

The process for finding this study's question was largely dictated by the concrete organizational problem that serves as the core of this study. However, Yin's (ibid) suggestions for coming up with the question were followed: Topical literature was studied without trying to find a specific question, then a few key studies (Lapointe and Rivard, 2005, Davis, 1989) were examined closely in order to discover the focal points, and lastly another set of studies on the topic of user IS acceptance, adoption and resistance were examined to find support for the question.

As for component ii), Yin (ibid) defines study propositions as directing attention to something that should be examined within the scope of the study. Merely the research question alone does not pinpoint the research focus, as according to Yin (ibid), only by stating some propositions can a researcher move into the right direction. Therefore the study proposition for this research is the assumption that *resistant attitudes and behaviors do not result from the IS in question being perceived as a threat, but rather as something unnecessary*. This proposition gives a direction for starting to look for evidence and aids in forming interview questions.

Defining the component iii), the unit(s) of analysis, was facilitated by the initial narrow scope of an existing IS usage problem in a single organizational unit of a large company. However, as Yin (ibid) points out, defining the accurate unit of analysis calls for careful consideration. Even though the organizational unit will be the topic of the research, the individual behaviors within the unit are the units of analysis. As the literature utilized has mostly focused on individual behaviors (Kim and Kankanhalli, 2009, Beaudry and Pinsonneault, 2005, Davis, 1989, Selander and Henfridsson, 2012), it is plausible to focus on the individuals within the unit rather than the unit as a whole. This manner will also facilitate linking possible results with corroborating previous research.

The process of finding the logic linking the data to the propositions (component iv) will aim at discovering generalizable patterns from the interviewees' statements. Yin (ibid) presents various other analytical techniques for linking data, such as cross-case synthesis, time-series analysis, logic models and pattern matching, from which none seem to be as relevant to this case study as explanation building. The topic of explanation building will be discussed more in subchapter 3.3.

Finding criteria for interpreting a study's findings (component v) cannot rely on statistical methods in a case study context, as much of case studies in general do not rely on the use of

statistics due to a lack of standard conventions and explicit criteria for interpretations (Yin, ibid). Yin (ibid) continues by suggesting the identification and addressing of rival explanations for findings, including information from them as part of the data collection procedure. According to Yin (ibid), this method will keep the researcher from "*stacking the deck in favor of the original hypothesis*", and to possibly find other reasons for the phenomenon being studied. Accordingly, viewpoints from Lapointe and Rivard's Multilevel model and other studies (Bhattacherjee and Premkumar, 2004, Beaudry and Pinsonneault, 2005, Kim and Kankanhalli, 2009) were used when forming interview questions.

Yin (ibid) presents four tests by which to judge the quality of research designs. The following table will present the tests and the suggested tactics for fulfilling them, followed with explanations for each in the context of this study.

Table 1: Four criteria for judging the quality of research designs (Yin, 2009)

Tests	Case Study Tactic
Construct validity	* Use multiple sources of evidence * Establish chain of evidence * Have key informants review draft case study report
Internal validity	* Address rival explanations * Explanation building
External validity	*Use theory in single-case studies
Reliability	*Use case study protocol *Develop case study database

Construct validity: Multiple sources of evidence are used: Interviews, documents, the IS in question and direct observations. A chain of evidence will be established via presenting a logical path from case study questions to the conclusions, retaining a followable path along relevant citations and the case study database. Key informants, such as representatives from the case organization will review the draft to ensure relevance and validity.

Internal validity: Rival explanations, such as other models presented in this study will be used as sources when forming interview questions. Explanation building, i.e. building causal links from initial research questions and propositions to the findings will be carried out during analysis.

External validity: As opposed to the statistical generalization of survey research, case studies rely on analytic generalization (Yin, 2009). Analytical generalization stands for generalizing a particular set of results to some broader theory, which also is the goal of this study. According to Yin (ibid), contrasting case studies to survey research with intentions to generalize samples to larger universes is incorrect. This study will thus be tested on external validity via comparing its results to extant theories on user IS acceptance, adoption and resistance.

Reliability: Even though the unique nature of this case study prohibits its exact replication by other parties, Yin's (ibid) suggestion of gathering a case study database prepared for external review will be carried out, should an external party wish to assess the truthfulness of claims made in this study. A separate case study protocol will not be included in this study, as it is deemed unnecessary in this context.

3.2. Data collection

Yin (ibid) states that case studies carry an inherent challenge, the richness of the phenomenon and the extensiveness of the real-life context, and therefore there are many more variables of interest than data points. The tactic suggested by Yin (ibid) is to use multiple sources of evidence in order to discover converging data. This will be carried out through multiple similar, semi-structured interviews, studying documents and artifacts, and via direct observations of system usage.

The majority of the information will be gathered via interviews, of which most are focused interviews – interviews where a person is interviewed for a short period of time, an hour for example (Merton et al., 1990). Additionally, some in-depth interviews will be carried out with a key informant within the organization. These interviews will not necessarily take place in only one sitting, aiming in gaining better insight into the matter or gaining corroborating or contrary evidence (Yin, 2009). An interesting part in the variety of data sources are the documents, mainly Microsoft Powerpoint slideshows, which give an insight into how the implementation of

the new business model was planned to be carried out. These documents can possibly be indicators of the level of managerial attention paid to the knowledge management system (KMS) during the implementation phase, when analyzing them from the viewpoint of what was written of the KMS and what was not. This factor will be analyzed further in chapter 4.

3.3. Data analysis

Data analysis is defined as "*examining, categorizing, tabulating, testing, or otherwise recombining evidence, to draw empirically based conclusions*" (Yin, 2009). Due to the lack of well-defined techniques, the analysis of case study evidence is difficult and should hence follow a certain analytic strategy to overcome the issue (ibid). The following paragraph will present viable analytic strategies (ibid) for defining priorities on what to analyze and why in the context of this case study.

The most plausible strategy, relying on theoretical propositions, is based on the propositions' role as being the starting point of a research, eventually molding into research questions based on literature reviews. The simple core idea of this strategy is hence holding the research proposition as an indicator on which data to focus on and which data to ignore. Additionally, it gives help in defining alternative explanations to be examined (ibid). Yin also unsurprisingly proposes the usage of quantitative data, which most likely will be utilized to a very small extent in this study, as sufficient evidence for answering the research question is likely to be found from interpreting the interview recordings alone – without quantifying transcripts with dedicated software. The third analytic strategy, examining rival explanations, will be carried out in order to ensure internal validity (chapter 3.1.). Different viewpoints on developing user resistance or tardy user adoption and acceptance will be taken into account when forming interview questions, in order to avoid bias toward the initial research question and research viewpoint.

To carry out the analytical strategy, an analytical technique should be applied. As mentioned in subchapter 3.1., Yin's (ibid) strategy of explanation building fits this explanatory single-case study most effectively. Yin (ibid) states that explaining a phenomenon stands for stipulating a presumed set of causal links of it, i.e. "how" or "why" something happened. Thus the explanation building in this study will strive to build comprehensive and plausible evidence in

order to provide relevant results for the research question and research proposal. The nature of this explanation building will be iterative, developing with every interview made and with every revision of the organization's relevant documents.

4. EMPIRICAL STUDY

This chapter will focus on the results of the 14 semi-structured interviews made, carried out with different representatives of the organization in question, either from the major and institutional client department or from various units across the case company who are involved in working with the KMS. The interviews were carried within a time period of roughly one month, from the 19th of October 2012 to the 20th of November 2012. In an effort to discover converging evidence on how events took place, internal documentation provided by the organization will be reviewed and users will be observed directly while using the KMS. Several similar opinions and points of interest arose during the interview sessions, which will be utilized in the context of Lapointe and Rivard's 2005 multilevel model. The influence of the interaction of the object of resistance and initial conditions are postulated to form certain perceived threats, and through triggering events the interaction of the aforementioned two will change to form a slightly different resistance behavior (see Figure 6 for clarification). This manner of analysis follows Yin's (2009) argument that case research must generalize to a theory, whereas quantitative studies generalize from a sample to a population. This chapter is divided into subtopics based on different, influential viewpoints such as management activities, KMS features and perceived relevance to own work. The events and opinions concerning these subtopics will then be discussed through the multilevel model (Lapointe and Rivard, 2005) lens in the following chapter.

The interviewees will not be specified or named, as the case organization wishes to remain unidentified in order to avoid censorship due to legal issues and to ensure the publication of this study in its original form. The interviews were held in Finnish, and the recordings are stored in the researcher's own research database and are retrievable on demand.

However, before delving into the details of the interviews made, it is necessary to describe the structure, constituents and recent history of the sprawling organization that has been studied, along with the KMS used in it.

4.1. Introduction of the case organization

The company itself is a large financial services provider, providing both banking and insurance services. The unit in this study's scope is the major and institutional client unit (MICU) of said

financial services provider, which deals with all large customers the company has. MICU's service proposition to their clients is based on the idea that MICU is able to provide expertise and solutions from all aspects of the service and product selection the financial services provider has, ranging from HR support activities to risk management and growth and investment support. These different aspects were coined as offering areas, and there is a total of six different offering areas. The unit structure and hierarchy is derived from this service proposition.

The unit itself consists of the general manager of the organization, who is in charge of three different business units in it: Offerings, corporate clients and institutional and core clients. The offerings unit consists of the people who are responsible for the different offering areas the MICU provides to its clients and the other two units are populated by client managers, who all have varying numbers of clients in their portfolios. Additionally, a support unit, major client services, exists in order to facilitate the daily operations of the MICU. The unit's senior advisor works a three-day week, engaging in business development and advisory activities. This senior advisor played an important role during the research phase of this study, as he provided the author with valuable organizational insight and opinions throughout the research process. This hierarchy is depicted in the following figure:

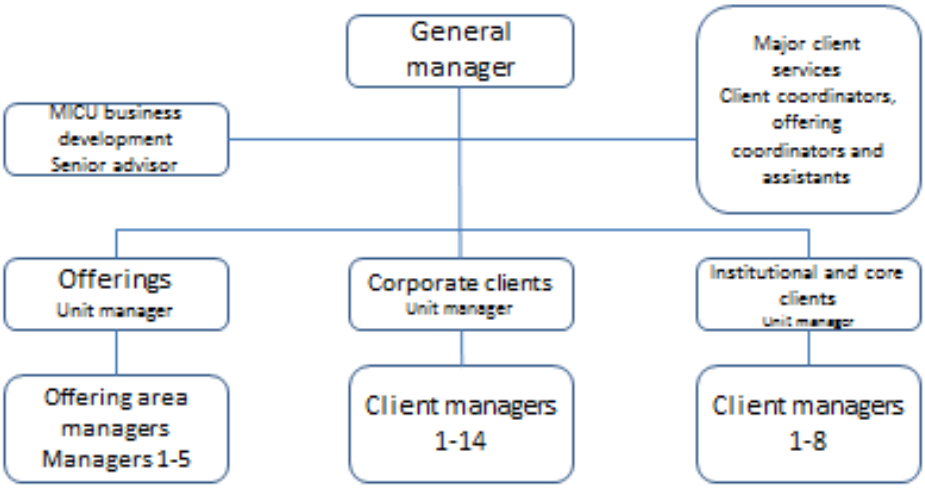

Figure 10: MICU hierarchy

All client managers lead offering teams consisting of an expert or experts from needed offering areas, a client coordinator and an offering area manager. The experts represent different areas of the company, ranging from underwriting to insurance and from asset management to financial services such as corporate car fleet leasing. Thus the range of different people and knowledge areas under the control of a client manager is quite significant, and there is an imperative need for a logical and intuitive sharing and collaboration tool (a KMS). This KMS should be used in order to ensure successful cooperation and sharing among the different constituents of the organization and to fulfill the service proposition given by the MICU to its clients.

This business model was implemented in 2010, as a way to provide a more comprehensive service offering to high volume customers. There is reason to believe that the usage of the KMS as a supporting tool in this business model was not planned sufficiently, and was rather introduced in a top-down manner which lead to passive user resistance and low adoption in some parts of the organization. The following subtopics will discuss this and other viewpoints exhaustively, in order to bring forward the critical issues discovered from the interviews.

4.2. Introduction of the KMS

The KMS in question is Microsoft's Sharepoint Server 2007, a web application platform for many purposes, such as document management, collaboration, wiki sites and intranet portals among others. It has an Office-like interface and is closely integrated with the Office suite, and has thus captured a significant market share in its own segment. It is designed to be usable by non-technical users. A common problem in Sharepoint implementations is that they tend to be implemented with a top-down and without organization-specific customization (Technology Services Group, 2011), which leads to information silos, documentation that is hard to find and unclear site hierarchies. This faulty implementation procedure usually stems from a lack of sufficient recognition of the possibilities and features that Sharepoint holds for organizations, resulting in a glorified file storage without a usage strategy or customization.

A typical Sharepoint site structure consists of a front page with organization-specific relevant information on display, e.g. a news feed, a list of recent document updates and progress charts on certain projects or other endeavors. Administrators can modify the content of the front page and

related file libraries extensively, allowing relevant content to be presented for any organization's purposes. Figure 11 depicts a generic Sharepoint Server 2007 site.

Figure 11: A generic Sharepoint Server 2007 site front page

Another interesting addition to this entirety is the fact that the financial services provider in question has their own CRM system where certain client data, including the MICU clients, is naturally maintained – which creates confusion within the user base by means of which data should be kept in which solution. This overlapping gives reason to speculate on how accurately management specified the usage purposes of both systems concerning processes related to the organization's new business model.

The following subtopics will discuss the different themes of the interviews and aim to discover convergence between the interviewees' opinions.

4.3. Implementation phase

When discussing the implementation of the KMS, a common topic was its small role during the roll-out of the renewed, offering team based business model. The new business model called for major changes from both managerial and grass-root perspectives, and significant changes ensued for everyone involved. One interviewee, a unit manager, commented aptly:

"--- The organizations were blown up and people even had to find their new desk locations"

This laconic statement portrays the magnitude of the organizational change brought upon the individuals involved, and the role of the KMS as a collaboration tool remained insignificant in comparison the other events taking place. The same interviewee continued by stating:

"The change was such a big thing that in that situation one Sharepoint or any specific one information system was irrelevant, as much bigger things were in question. This Sharepoint was just one tool in this big thing. --- A thousand and one things were going on so this (Sharepoint) implementation was the only choice"

Other individuals within the MICU provided statements that support the previous quotes, stating e.g. not recollecting how the KMS's role as a supporting tool for the work methods was discussed prior the business model implementation, or that the KMS's role was not thought through with work processes in mind. One interviewee, a client manager, pointed out that she does not remember if the case regarding the KMS's usage on the management's behalf was *"Use it if you want to"* or *"We will use this now"*. This gives reason to postulate that the former quote is closer to the truth, as should specific organizational policies have been put in place, the interviewee most likely would have had a recollection of them at least to some degree. The same interviewee also described the KMS as being *"added to the bargain"* along with the business model renewal, which speaks a certain language in regard to the KMS's perceived significance among individuals.

Continuing along the tracks of what the previous interviewee stated, another client manager claims that no exact information on how and to what purposes the KMS should be used in, when

discussing the topic of management activities in general and during the implementation phase. The same client manager also mentioned that *"organization-wide planning on how to capture the KMS's value has not been very effective"*. The tone and general opinion on how the KMS's implementation phase was carried out was significantly homogeneous throughout the interviewee base, as quotes such as *"I am not aware of the product vision"* give hint of an organization-wide consensus of the KMS's lackluster implementation. Another client manager gave a somewhat poetic quote on the current situation and what the plan was prior to the implementation:

"The beautiful idea from the time before the implementation has diluted"

This client manager was involved in the planning sessions where future usage of the KMS was thought of, but now mentioned the original plan being diluted multiple times, in ways similar to the previous quote. One can ponder upon how the planning sessions were carried out if the end result was something which no one was satisfied of. However, as discussed earlier, the magnitude of the organizational changes made most likely had an effect on how comprehensively the KMS usage was planned in said sessions. These opinions then converge with what an offering area manager had to say of the whole organization's capabilities: *"Our organization's general problem is in rolling out new processes and working methods"*, while discussing changes in her opinion of the KMS over time. This statement bears certain explanatory power when attempting to find reasoning for why the KMS's implementation resulted in passive resistance across the organization and its constituents.

All of the opinions presented above originated from people within the MICU, i.e. the core of the business model. However, the much of the process of constructing relevant solutions for clients relies on the expertise of professionals from various units across the company, such as underwriting, cash management, investments and other financial services. Hence, the opinions and preferences on the KMS of the people from these units should be one of the top priorities in order to ensure a sufficient level of documentation and co-operation. The interviews however revealed that the implementation was executed in a top-down fashion, with little attention to how the constituents worked before joining the ranks of the MICU business model.

Many client managers and client coordinators within MICU argue that units and people from outside, i.e. the offering team members or professionals, should be included more in the usage of the KMS. One client manager claims that *"organization-wide KMS use is superficial"*, while a client coordinator says that *"the whole organization should be involved in using the KMS similarly"*. Evidently the go-live of the KMS did not result in similar, organization-wide practices in the context of its usage and wanted level of co-operation. When discussing this issue with a representative of the insurance side, a professional from the underwriting unit, she mentions that

"In the beginning Sharepoint's role was bad, because there was no chance of restricting user rights and we had to upload files and then delete them after a while"

Additionally, the insurance side of the company has also accustomed to using a shared network drive, Y:, in sharing documents, a legacy solution that is much more rigid when considering sharing, co-operation or viewing rights. The KMS was, in the words of the same representative of the underwriting unit, *"supposed to replace the Y: but it didn't and it was all a little confusing"*. Both of these claims demonstrate a lack of an orchestrated approach to implementing the solution for all facets of the organization, especially as the insurance side had their own security protocols and guidelines, added with an organizational indoctrination to the usage of the shared network drive for equivalent work processes. The previous commentary is supported by the words an offering area manager when discussing the issue of replacing systems in a cohesive manner:

"People maybe see the KMS as only an additional place to store things that already stored somewhere else. --- When solutions are brought in, they should clearly replace something and this should be communicated to the organization"

The same offering area manager continued on the abundant amount of unit-specific KMS sites, whereas organization-wide guidelines on their use are nonexistent. She says that this results in siloed, separated organizational units using their own locations and argued succinctly: *"'People say that this (KMS site) serves us well' 'That's nice but it doesn't serve the entire organization*

well'" Yet again, this commentary supports the supposition that the implementation was not planned with the entire organization's needs in mind.

When discussing the KMS implementation with representatives of the insurance side of the organization, which is in a different location geographically than the MICU, a certain sense of disconnectedness comes into play. The previously quoted professional from the underwriting unit expressed frustration on the issue that she was not informed appropriately of the new offering team work method, and brought up the issue of being located in different offices across town:

"There's a problem with this MICU business model as they're in location A and we're in location B and they are informed of certain things, and then they expect us to know about the same things too – we're out of the loop with these things"

Considering the situation according to this statement, it seems that even though successful and fluent co-operation between the all sides of the organization is a key factor for the business model to work, necessary communication standards and methods have not been considered with adequate precision. This supports the client managers' concerns of the whole organization not taking full advantage of the KMS, as it is plausible to hypothesize that the reason behind it lies in the very lack of communication now brought up. However, it is fair to notify the reader of the fact that insurance products may not be an important source of revenue for all clients and thus do not attract the full attention of all client managers and the MICU organization in general in all cases, which might thus lead into the constituents in insurance being left "out of the loop" as mentioned. Whatever the situation may be, a pervasive characteristic of the implementation phase from the insurance's side seems to be lack of involvement.

As a final viewpoint on the implementation phase topics, a representative of the capital markets unit and an offering team member brought up a slightly more lenient opinion of the topic. He claimed that he had slight problems with user rights and the KMS structure in the beginning of the new business model, but did not seem to be too worried about either during the interview. This most likely is due to his significant experience of using the Sharepoint platform in other

contexts previously, as he addressed himself as somewhat of a power user in comparison to many others in the organization. Additionally, he perceives that his opinion was heard before the implementation of the business model and during the planning of the usage of the KMS. However, he mentioned that a subset of the user base is probably frustrated and skeptical as they are not as proficient in using the KMS as e.g. the capital markets representative.

4.4. KMS features

A common claim regarding the KMS's features in general was one of stating that only a small portion of its functionalities are actually used. A client manager expressed his concern on the topic, stating that the KMS is not used to its full potential, but rather as a glorified file storage or shared network drive. He also contemplated upon the KMS's suitability as a comprehensive document management solution in general, but however did not bring up any notion of a possible compensatory solution or software. This may be due to the simple fact that the whole company makes use of the KMS in question in a variety of ways depending on the unit that is using it, as it is the proverbial weapon of choice in knowledge and document management across the company. Supporting the initial argument of only a small portion of the KMS's functionalities being used, a client coordinator stated that *"the features in it are not used to the full extent"*, and that it could be more effective to the organization if it was used more and in new ways. An offering area manager had similar thoughts with the two previous interviewees, as she claimed that even though the KMS is currently a facilitator of shared work, she does not think that she uses all the features available in Sharepoint Server 2007. All in all, a prevailing theme across interviewees seemed to be that the features are not utilized to their full extent.

Congruent to the previous theme of underutilizing the KMS's possible features, the way in which the folder structure and navigation was planned and executed was largely seen as a target for improvement. This issue was actually mentioned by all interviewees in varying manners, with quotes such as:

"Sharepoint has not broken through here" – An offering team member, insurance

"Things are not easy to find from the KMS" – An offering area manager

"What is not clear is that which Sharepoint location is open for whom and where to upload certain documents" – Unit manager, offerings

"We have many Sharepoint locations, it's not clear anymore, using it is hard and if you need to ask instructions there's no one to ask from" – Client manager

What can be inferred from this organization-wide opinion is that this very reason most likely is a significant contributor to the passive resistance prevalent across the organization, hindering co-operation and full adoption of the planned work methods. Contrasting this situation to Lapointe and Rivard's (2005) multilevel model, the interaction of initial conditions and the object, i.e. system features, provoke perceived threats in users and create resistance behaviors. Thus from the users' view the KMS bears features that are not beneficial for them, creating confusion and frustration and hence forming resistance with time. An intriguing viewpoint into the topic of features and their usage is one brought up by a client manager and a client coordinator, as they pondered if the whole organization is mature enough to fully adopt the implemented work methods. It is indeed a thought-provoking perspective, but as no other converging arguments were heard, it is plausible to profess the low likelihood of this being true. This in turn is due to the fact that many interviewees declared the KMS itself as not challenging technically, but rather the way in which the folder structure and hierarchy has been designed initially. The interviewees' statements on the technical complexity followed the lines of the following quote:

"Probably people are aware of the basic features of the KMS, --- but then again as usage is limited not much is asked, --- we have smart and educated people here and the problem cannot be in the technical side"

Even though the poorly designed folder hierarchy and difficulty of navigation are not inherently features of the KMS solution, from a user viewpoint they are features that inhibit the successful usage of the KMS. Therefore discussion the previous topic has been included in this subchapter, rather than e.g. in the upcoming subchapter on management activities.

An interesting facet concerning the daily work of the individuals involved in MICU's business model is the role of various CRM solutions in comparison to the KMS in question. As topical

client-related work is carried out in both and documents are uploaded into both systems, the interviewees perceived task division between the two systems as uncoordinated and unclear, resulting in added confusion in regard to which tasks should be carried out in the KMS and which tasks in the CRM solutions. As an addition to this lack of coordination and guidelines, some users have to operate up to three different CRM solutions created for various purposes as a result of the merger between the banking and insurance organizations. Although this issue is not within this study's scope, it is relevant to mention in order to provide the reader the context in which the interviewees are involved. This issue in this study's context underlines the lack of clarity related to feature usage, and brings out quotes such as the following:

"What to do in which system creates discrepancies"
"The awareness for the fact should I do this in the CRM or in the KMS should be elevated to a major issue"

This problem has resulted also from the lack of management guidelines, and will be discussed from a different angle in subchapter 4.7.

The KMS seems to have one pure software issue that seems to be relatively common. As one of the most frequently used feature of it is the document upload feature, it should function flawlessly, especially as it is not complicated technically. Nevertheless, three interviewees brought up the issue of not being able to upload a document into the KMS and claiming the document somehow "disappears" during upload. This has reduced user trust in the KMS and most likely has played a part in increasing passive resistance. As one interviewee, an offering team member from insurance, stated that as documents sometimes disappear during upload, it leads into people saying "I'm not using this" and that these technical issues should be reacted upon immediately. As said, this issue is purely a software bug, and most likely is inherent in the Sharepoint Server 2007 code, rendering it an issue that cannot be mitigated via managerial actions. It is also troublesome for implementers to thoroughly test the IS being implemented prior to its go-live, as the purchasing side expects the product work fluently and without such fundamental bugs. One might however speculate upon the skill level of the user base and ponder whether this is an actual software bug or a result of user confusion and sometimes technical

incompetence, but this speculation will not be taken further due to its rather irrelevant nature. The author has not been able to replicate this issue during extensive test usage of the KMS.

When discussing this topic in the level of individual features, a curious manifestation of the insufficient feature usage arose: A subset of the user base does not use Sharepoint's search functionality. Even though multiple complaints on not finding the right documentation were received during the interviews, the content search functionality had not been taken advantage of in some cases. When asked if an interviewee has used the search functionality, quotes such as the following bluntly state the nature of the issue:

"I have not used search. In fact, I don't think I've ever used search. --- I probably haven't even realized there's a search functionality in there."

"No, no, I don't use it. --- Well, I can't use it, you tell me what it is!"

It cannot be stated that this is the sole reason behind the difficulties of finding the right things from the folder hierarchy as it is indeed complicated and unintuitive, but this lack of using a fundamental feature of the KMS is somewhat peculiar. As for the users' defense, the organization does not have a documentation naming or tagging policy, or any guidelines on the matter, which certainly complicates search efforts. Additionally, the fact that the search functionality was coded not by e.g. Google engineers, but by Microsoft engineers circa 2006-2007, may suggest that it does not function as well as a generic user might expect it to.

4.5. Changes in attitude over time

The most prominent feature of commentary regarding temporal attitude changes was that there were little or none. This was rather surprising, as the initial case setting seemingly involved the user base's problematic relationship with the KMS and it was plausible to expect for the situation to have deteriorated with time. This expectation in turn was derived from the initial talks with the management regarding the current situation, but as said, the author's initial hypothesis on this topic was somewhat incorrect. Interviewees tended to mention things such as having a generally positive attitude towards the KMS and that the attitude has not changed over time, usually simultaneously arguing that they realize its value as a tool facilitating collaboration. It appears that most users see the KMS's potential but have refrained from fully utilizing it due to reasons mentioned in previous subchapters. Some users also mentioned previous experience from e.g. former jobs as a source of a stable and generally positive attitude, as the KMS solution itself was nothing new. Management activities possibly affecting low usage levels will be discussed in the next subchapter.

As the general opinions and attitudes have not developed into a worse direction, this also has an effect on the application of Lapointe and Rivard's (2005) multilevel model as the theoretical framework of this study, as it is based on the temporal nature of resistance behavior development. It can be theorized that user resistance can remain passive in some contexts, possibly similar to the context of this case study, where the IS used is not absolutely necessary to completing one's work, but rather functioning as a complement or facilitator. This supposition will be further elaborated on in the final chapter.

An interviewee, an offering team member from insurance, who stated that her attitude and thus resistance behavior toward the KMS had changed, claimed that it had changed for the better. This was due to the fact that a certain frequently used site's structure was rationalized to better suit user needs, thus changing her attitude of the whole KMS environment. The following quote from the said offering team member is indicative of how simple, yet effective actions can increase positive feedback and usage:

"That's how it changed, ok, someone has thought of the structure and my job is to use the templates in this location"

Even though user attitudes have not changed much over time, they have in many occasions remained indifferent towards the KMS. This is a negative fact as MICU management pursues organization-wide recognition of the KMS as a useful tool for collaboration and shared work, not as just another mandatory file storage location. One offering area manager argued that user attitude can be the following:

"Well, it's there and it's another additional file location and I have to use it"

She also stated that the KMS does not invoke strong feelings either way, and that it is hard to enforce work methods when people are not against or for it. This poses a definite challenge for the management, as user resistance of this form can be arduous to diminish considering the fact the users have adopted this, to a certain extent, apathetic view towards the KMS.

4.6. Management activities

In any change management situation, active management of the situation, widespread communication and top management involvement create a sense of importance to the future user base of the IS being implemented. However, it seems that even though the KMS's role as a co-operation and sharing platform was planned to some extent, the majority of the interviewees perceived the KMS's implementation as a top-down process and that e.g. no instructions or guidelines on how to utilize the KMS most effectively were given. Especially the lack of clear guidelines on what to do with the KMS has most likely been a major contributor to the current passive resistance within the whole organization.

Although many interviewees claimed that management has always encouraged the usage of the KMS on a general level, allegedly no specifications on which purposes it should be used on have ever been made. Commonly held knowledge within the IT industry holds that if an IS is merely handed to the users and no specific usage instructions, training or guidelines are given, its usage will not be as effective as it could be. One interviewee, a client manager, argued that the management's instructions were along the lines of the following quote: *"Use if you see necessary"*. This fact is rather fascinating considering the fact that the management wishes for the KMS to be used throughout the organization as the primary content sharing solution. The

same interviewee also stated that the management has a positive and open attitude for new tools and work methods in general, but enforcing their usage has not been effective or even nonexistent. This seems to be the case with the KMS as well, especially as its go-live in the current format was done alongside the widely discussed and substantial business model implementation, leaving the KMS's usage enforcement a background issue.

The interviewees constantly mentioned the lack of the aforementioned usage guidelines, which allows contemplation on how well the needs of the whole organization were thought of while planning how the offering teams will work. As the daily activities of the offering team members include the usage of multiple client data related software solutions, it is topical to accurately determine the purposes of each of them. Commentary on what to use the KMS for and what to use e.g. the banking CRM system for brings forth compelling evidence of the lack of management coordination regarding these processes within the organization. One interviewee stated that no guidelines were given on common use cases, such as uploading a document or tagging it with relevant metadata, which possibly created insecurity related to the software's usage and inhibit its adoption.

The lack of user training also seems to have been an important inhibitor of a successful adoption of the KMS, as users were left to their own means to discover the possibilities and features of Sharepoint. As core functionalities of the KMS such as search, metadata and a document review process facilitator called workflow have not been used organization-wide or at all, a need for user training is rather evident. As one client coordinator stated, only maybe 10-20% of the functionalities are currently used. These functionalities however are enough to fulfill her own tasks, but in order to grasp the full benefit of the KMS, additional training is needed. She also mentioned that some members of the organization may not be as technically savvy as others. This statement is indirectly corroborated by a unit manager, who claims that *"As long as people can't use Sharepoint sufficiently, normal change resistance will exist"*. One opposing opinion regarding training was also heard, given by an offering team member residing in the capital markets unit, who claimed that training sessions tend to be unpopular and achieve low attendance. Nevertheless, it is clear that the KMS is currently underutilized, and additional training could prove to benefit the organization.

As the organization involved with the business model of MICU and its client work spreads across multiple units and a large number of individuals, the need for strong, top-down coordination and information push is of paramount importance. A symptom of the lack of these two is on full display in this following quote made by an offering team member:

"It feels like that it is expected of our side to upload more information into Sharepoint, but no one has barked loud enough yet. --- We are still doing the least amount work possible"

This statement conjoined with the fact that user attitude towards the KMS is generally positive gives reason to assume that enforcing efforts would create a positive effect on organization-wide acceptance of the KMS and diminish user resistance to some degree. This argument is supported by a quote from the capital markets representative, who discredited training sessions but in turn claimed the following:

"Little by little as people are directed into using it, it forms into a way of working, an approach. --- At least in Markets, probably, top-down communication on its (Sharepoint) usage"

As an intriguing viewpoint to the general topic of management activities was gained from an in-depth discussion with MICU's general manager, who seemed to be very much on track of what the underlying issues are in the organization regarding the KMS's resistance. The lack of training, enforcement and common guidelines can be, based on his opinions, attributed primarily to prioritizing as other urgent matters have risen above the organization-wide KMS issue. This fact in turn reflects the organizational attitude towards the KMS, as its role has most likely never been explicitly determined and that it has always remained as a complementary solution rather than a key factor in the daily work of the offering teams and organizational knowledge management. The general manager also admitted that e.g. ways to measure the usage levels of the KMS have not been thought of, along the lines of this quote *"There's some of that to some degree, but I for example haven't practiced it enough"*. He also states that he supervises the client folders to see what sort of documentation is uploaded and if not he asks the responsible people for reasons, but says these actions are very random and unsystematic.

Conclusively, the user base's view of the management's activities have been somewhat lacking, as there have not been clear definitions on which solutions are used for which purposes, the users

have not received any training on the KMS and users outside MICU tend to withhold from using the KMS without enforcement. However, much of the current situation can be attributed to the business model renewal in 2010, but as is evident and spoken out by the general manager of MICU, an effort to elevate the status of the KMS usage is in dire need.

4.7. Perceived relevance to own work

The final subchapter on the topics discussed in the interviews will concern the interviewees' views on the relevance of the KMS to their own work, depicting organization-wide opinion on how valuable or useful the KMS is perceived to be.

The most apparent division of opinions was between MICU interviewees and offering team experts hailing from other units in the company. As client work with the major and institutional clients does not constitute the full workload of an offering team member, it swiftly became clear that they do not perceive the KMS the same way as e.g. client managers in MICU. This division undoubtedly plays a part in the lack of enthusiasm and current passive resistance across the organization, as some offering team members perceive KMS usage in this context only as added work and are possibly not as devoted to the cause as client managers. A quote from an offering team member from the underwriting unit in insurance clearly depicts the current state of affairs:

"To us it's only a file storage location, to others it might something more as they share workspaces and such"

Engaging all users may thus prove to be quite problematic, as the initial, top-down implementation has resulted in stubborn passive resistance along the lines of the previous quote. Additionally, a significant factor in involving all offering team members to work productively with the KMS seems to be the amount of effort each client manager puts in instructing and managing their dedicated offering teams. The same interviewee from insurance candidly stated:

"I don't see the client managers uploading files themselves, as some client folders are completely empty."

This opinion was brought up alongside her declaring that a client manager's actions determine the actions of the entire team. Therefore the traditional method of leading by example seems to be a determinant in the successful alleviation of passive resistance across the organization. This is especially true in this context as not all offering team members are located in the same premises physically, and mostly see tangible process through the usage levels of the client folders they work with.

The theoretical basis for reasons behind this type of passive resistance behavior can be found from Lapointe and Rivard's multilevel model (2005), to which the unwanted added documentation efforts can be attributed as a perceived threat, resulting in certain resistance behaviors. This topic will be more thoroughly discussed in chapter 5.

When discussing perceived relevance to own work with MICU interviewees, i.e. client managers, client coordinators, unit managers and the general manager, the opinions differed from the ones brought up by the offering team members. One client manager maintained that the benefits brought by the KMS are obvious, given that working with it functions as initially planned, as they have previously worked primarily only with emails and other legacy solutions. A unit manager stated that despite the KMS's shortcomings, he sees it as a positive addition to cooperative efforts, while an offering area manager claimed the KMS is a proper tool that helps in one's work processes. It is hence clear that as the individuals who use the KMS daily as a topical instrument in accomplishing their own work tasks, perceive it as a useful tool in co-operative efforts. Thus also their resistance in its current form can be assumed to reduce quickly if sufficient measures are made to mitigate the issues they most frequently complain about.

The job description of a client manager involves combining data from various sources to create novel solutions for clients in their portfolio, and thus the need for a well-functioning organizational knowledge database is topical. The most common complaint received from said client managers was on the unclear structure and hierarchy of the data stored in the KMS, which clearly indicates that they see the KMS's value but cannot fully capture it due to aforementioned issues. On the contrary, KMS users outside MICU seem to place less value on its usage, as they act more as data inputters than data compilers and utilizers. Therefore an interesting juxtaposition of different needs remains prevalent within the whole organization involved in the

business model of working with major clients. As a result of these differing needs, modifying the KMS's usage and user interface according to the needs of all user groups can prove to be a significant coordination challenge. However, should these modifications be made, it would undoubtedly have a positive effect on how the whole organization perceives the relevance of the KMS in their daily work.

The following chapter will describe how the findings of the empirical study fit with Lapointe and Rivard's multilevel model (2005), a framework for explaining how resistance behaviors change during implementation. A post-implementation viewpoint will be introduced to match the framework with the case study context. These results will then be discussed, the suitability of using the multilevel model in this particular context will be analyzed, both theoretical and managerial implications will be described and the research question will be answered.

Table 2: Important topics of interview themes

Interview theme	Main observations
Implementation phase	• The KMS's role during the business model implementation phase was very minor • The implementation planning seems to have left out the needs of the organization surrounding the MICU • A vision on how the KMS should be used did not exist during the implementation
KMS features	• Interviewees perceived that the product's features are not used to full extent • An inconsistent folder structure and hierarchy creates user resistance • Interviewees are unsure of which exact tasks to carry out within the KMS and which tasks in other CRM systems
Changes in attitude over time	• User resistance remained on a certain, passive level throughout the examined time period • The KMS fails to invoke strong feelings in the interviewees, thus resulting in apathetic usage behavior
Management activities	• No clear management guidelines on how to use the KMS were given, resulting in user confusion • No user training was given • The MICU has not pushed wanted working methods through to the external organization effectively enough
Perceived relevance to own work	• MICU interviewees and the interviewees from the external organization see the KMS's usage differently • Especially MICU interviewees claim to see the added value of the KMS

5. FINDINGS

The main focus of this chapter is to align relevant IS research with the results of the empirical study described in the previous chapter, in order to provide either confirming or denying evidence of the applicability of the chosen model (Lapointe and Rivard, 2005) in the case study context. Additionally, concrete managerial recommendations will be given to retain a grasp also to events taking place in the real world and not only in the academic actuality. This chapter will hence be divided into subchapters that discuss how the five concepts of the multilevel model mesh with the context of the empirical study, after which their interplay will be analyzed and the model's applicability to this unique context will be deemed either possible or not possible. The following managerial recommendations will most likely be applicable in similar contexts where the implemented web application platform is from the Microsoft Sharepoint product line or a similar KMS solution.

The five concepts of the multilevel model used in this chapter will be the following: Object of resistance, initial conditions, perceived threats, resistance behaviors and triggers. Contrary to chapter 2.5. where the multilevel model was initially introduced, one of the actual concepts used in the model, subject of resistance, is replaced here with the trigger concept as the subject of resistance needs no further elaboration here – it simply is the entity that adopts resistance behaviors, i.e. the individuals in the case organization. Including the trigger concept in turn allows for the analysis of e.g. possible management actions that might have had an effect in individual resistance behaviors. Additionally, the emergence of individual and group resistance behaviors will be addressed according to Lapointe and Rivard's postulations.

5.1. Object of resistance

Lapointe and Rivard (ibid) explain the object of resistance as the direct object that is the target of resistance behaviors, e.g. employees resisting management's efforts to institute change and users resisting the implementation of an IS. The initial expectation prior to the empirical study in this study's context was that the object of resistance would explicitly be the KMS in its entirety or a subset of its features. However, the interviews proved that the user base does not inherently resist the KMS as a product, but rather the way the organization insufficiently planned its usage and

structure. This fact can be deemed as a suggestion that the organizational attitude towards the KMS's usage can be effectively altered if sufficient measures are taken. Lapointe and Rivard additionally discussed how the object of resistance can change during implementation, e.g. from resisting a system itself to resisting a faulty system's advocates, who most likely are management, should resistance develop to that point. This temporal viewpoint is of little use when discussing the object of resistance, as the majority of the interviewees claimed that their attitude towards the KMS and its usage varied very little or not at all during the time period ranging from the business model implementation in 2010 to the time of the interview.

As the name of the multilevel model implies, resistance behaviors manifest themselves in both individual and group levels. Lapointe and Rivard (2005) posit that when individual behaviors converge, more malevolent group resistance behaviors emerge, resulting in stronger resistance. When comparing the various opinions on the object of resistance, certain dispersion of opinions was observable, which thus can be postulated to have been an inhibitor of the convergence of the individual resistance behaviors in the case organization. In other words, as different opinions on the object of resistance existed, the interplay of initial conditions and object of resistance resulted in different individual resistance behaviors. For example, some interviewees argued that as the actions of management during implementation resulted in them perceiving the KMS as only another mandatory file storage location. Others stated that they saw the inherent value in the usage of the KMS, despite what the management might have done wrong and what they might have done right during the implementation.

One novel viewpoint in this chapter's context can be labeling the perceived overlapping and ambiguousness between the usage of the KMS and the CRM solution as being a part of the object of resistance. Users expressed frustration due to this matter, which has most likely created incoherent work routines and resulted in documentation being uploaded into wrong locations, creating further organizational disorientation.

Conclusively, the object of resistance was revealed to be the lack of coordination and guidelines on the KMS usage, i.e. management actions during implementation, which did not change during the time period included in the study. The following subchapter will cover its counterpart in the

interaction process resulting in perceived threats, the initial conditions. This allows positing reasons for why the resistance behaviors formed into their current state.

5.2. Initial conditions

Lapointe and Rivard (2005) do not explicitly explain the meaning of initial conditions in their research paper, but do give two examples: Distribution of power and established routines playing a part in how threatening an object is perceived to be. In the case context the most significant initial condition affecting the formation of the organization's opinion, or lack thereof, on the KMS was the implementation period of the new business model. This formidable process brought on significant changes throughout the organization, which inadvertently left the planning of the KMS's usage as an insignificant background theme. This initial condition can be dubbed as being an organizational level condition, as it was similar for all proponents of the organization.

Conjoined with the previous initial condition, another obvious factor that can be counted as an initial condition is the previous state of affairs prior to the business model and KMS implementation. Before the business model implementation daily business was carried out in a radically different fashion when compared to the current status quo. Therefore this initial condition envelopes all perceptions of a previous stable world of the users, to which the novel implementation period served as an interfering factor. Similarly to the previous factor, this initial condition was largely similar to all sides of the organization by means of a collective change in mutual work. Breaking these established routines joined with the confusion involved with the business model implementation in all likelihood had significant effects on the user base's perceptions of the quality of the working conditions before and after the changes. Additionally, as the KMS was previously in use for unit-specific purposes in the insurance side of the organization, while it was introduced to the banking side as a completely new tool during the business model renewal, efforts made in merging the varying skill levels and work methods within the whole organization possibly added to the total user confusion.

As an addition to the organizational initial conditions, certain specific initial conditions surfaced during the interviews, specifically from individuals external to the MICU. A common opinion within these interviewees was that the KMS's usage was perceived as merely added effort to their current work, which depicts the fertile ground for breeding passive resistance behaviors.

Thus an initial condition for this segment of the user base was also the previously stable world, i.e. established routines, but in this case the amount of work was perceived to having increased as opposed to work itself changing within the entire organization.

Another significant factor that can be counted as a part of the established routines initial condition is the widespread usage of the shared network drive in the insurance side of the case organization. Its usage is an old habit, with a user base counted in the hundreds across the whole insurance organization, while no logical reason exists for using such a legacy tool – unless old habits count as logical reasons. As the insurance users store both sensitive and non-sensitive customer data on the shared network drive, the usage of the KMS creates confusion, overlapping of certain data and most importantly inconsistency on where to store relevant client data.

As the object of resistance and initial conditions have now been discussed, the posited perceived threats of the interviewees will be discussed in the following chapter.

5.3. Perceived threats

As initially explained, the interaction of the object of resistance and the initial conditions result in case-specific perceived threats. Lapointe and Rivard (ibid) state that user IS resistance literature in general shares the idea that for resistance to occur, some threat has to be perceived. They also bring up a viewpoint that people do not resist change *per se*, but rather react to the threats that they perceive will be brought by that change (ibid). This viewpoint is congruent to the claims made by Kim and Kankanhalli in their status quo bias study (2009), where they state that user resistance can be due to bias or preference to stay with the current situation. This bias or preference can be seen as a response to a threat brought by change, which can then be explained with the three categories Kim and Kankanhalli introduced in their study.

The claims made by the interviewees revealed common perceptions of low-level threats to e.g. own work habits and the shared work of the offering teams. Almost all interviewees claimed that the sheer number of storage locations for various types of documentation creates frustration and confusion when using the KMS, which thus can be attributed under the perceived threat the KMS supposedly poses for individuals' work habits. This fact remains the single most significant factor of creating resistance behaviors, as the case organization seems to almost unanimously

have a similar opinion on it. It also introduces a very viable managerial implication, as this issue should be answered to as swiftly as possible in order to alleviate its negative impact on the user base.

Another perceived threat that can be categorized as being disruptive to previous work habits is the lack of distinction between the usage purposes of the utilized CRM software and the KMS, as both are used as information sources for client work. Interviewees from both the MICU and outside units working within the business model's confines argued that using the KMS along with the CRM software is a constant source of confusion, as users are unaware of which client-related content and information is in which system and where to start searching for it. Therefore this threat can inhibit the KMS's further adoption and more comprehensive usage, as the initial contact to it by users has resulted in such negative connotations.

Aside the aforementioned two threats, the offering area manager interviewed brought up a relevant, organization-wide perceived threat. It originates from the fact that the KMS's core purpose is to facilitate the shared work of the offering teams, in which individuals from various different units across the company work together on case-specific documentation. However, the user rights management in its current form has created issues, as it has proved to be limiting in its rigidity. This hinders the possibilities of individuals from all sides and units of the case organization to partake in client documentation creation efforts, such as compiling a comprehensive sales pitch slide set that covers all necessary knowledge from all relevant aspects. As all users cannot easily gain access to wanted file locations, frustration ensues along with redundant email attachments with multiple versions of the same client pitch document. Yet again, this issue is largely solvable through revamping the user rights granting and management process, possibly by simply allocating more resources into it. This proposition will be discussed further in the next chapter.

What seems to be a common factor with all the threats the interviewees perceived as to have brought by the KMS is the fact that all of them lack the potential to develop into very malign threats, and can be mitigated with decisive managerial actions. However, an important factor in this necessary and hopefully upcoming mitigation process is the evident need for gathering user

opinions on the future structure of the KMS along with sufficient guidelines, as this has quite obviously been disregarded to a large extent in the past.

5.4. Resistance behaviors

As stated in the conclusive paragraph of the previous subchapter, the mildly negative nature of the threats perceived by the user base has resulted in corresponding resistance behaviors across the organization, both in the MICU and the external units. These resistance behaviors are characterized by their easily approachable type, and as said, can most likely be alleviated simply by asking the users for their opinions on how these current shortcomings could be solved, i.e. how should the user interface and folder hierarchy be modified to better fit their needs.

As for the current resistance behavior, the most prevalent manifestation of it can be simply labeled as apathy towards the KMS. Users demonstrate their frustration with the problems described earlier by simply not using the KMS to its full extent or in some cases as little as possible, and displayed little enthusiasm for giving suggestions for improvement. The interviewees tended to invoke to the lack of management guidelines and the lack of user interface clarity and intuitiveness when questioned about the negative aspects of the KMS's usage or for the reasons behind low usage levels. This apathetic usage of the KMS certainly hinders the co-operative efforts of the offering teams and complicates the provision of information for all constituents involved in the work with any given client. As Lapointe and Rivard (ibid) explain, apathy as a resistance behavior is the first manifestation of such behaviors after an unsuccessful IS implementation. Despite the fact that the interviewees claimed to realize the benefits brought by the KMS, its usage levels still remained low due to this very apathy – while it is however important to notice that the said behaviors remained the same and did not develop into more significant resistance behaviors, namely e.g. active or aggressive resistance (Lapointe and Rivard, 2005).

The case organization seems to be facing a definite challenge in the effort of changing the apathetic resistance behavior of the client managers, as they appear to be in the key position for

spreading either positive or negative usage behavior across the organization. As one interviewee mentioned, the client manager's usage of the KMS sets an example by which parties not so intimately involved will be adjusting their own usage habits. The client manager's role in the business model can be seen as the dynamo that keeps the offering teams operational and up to date. Thus this factor also holds an important viewpoint for managers to notice, which will be discussed in the following chapter.

5.5. Triggers

Lapointe and Rivard (ibid) hypothesize triggers as the factor in their model that can modify either the set of initial conditions or the object of resistance. They are concrete events or actions, such as actual consequences of resistance behaviors, managerial actions or other actors' actions. Triggers hence play a topical role in the longitudinal development process of resistance behaviors within an organization, as they explain the actual change from a certain resistance behavior to another, such as a change from passive resistance to active resistance and from active to aggressive resistance.

However, the trigger concept is not as useful in the case context as the other concepts of the multilevel model, as the overall resistance behavior of the case organization has remained at a reasonably steady level for the examined time period, 2010 – 2012. It can nevertheless be postulated that one trigger affecting the current resistance behavior is the inactivity of the management in correcting the current situation, which lead into decreasing usage levels that eventually reached a plateau that the organization currently resides in. This postulation is supported by the multitude of comments that describe management actions on the KMS issue as mostly nonexistent or not forceful enough to create changes.

The role of the KMS (Sharepoint) in the organization is characteristic to failed Sharepoint implementations in general, as using it to improve collaboration and knowledge management often fails in creating sufficient momentum among the user base for various reasons (Technology Services Group, 2011). This state of affairs is a double-edged sword, as the situation is very unlikely to deteriorate further, but it is also laborious to reassure the organization of the KMS's

usefulness and value and to actually engage the user base to using the KMS via e.g. another go-live initiative.

As the trigger concept can be deemed less useful than the other concepts of the multilevel model, it also bears certain ramifications to the usage of the model in analyzing the resistance behaviors sparked by an inadequate KMS implementation, i.e. in the case context. In this scenario the KMS is not absolutely necessary to the individuals in the organization, and thus may fail to invoke strong feelings either way, which, as said, all but nullifies the need for the trigger concept. As the multilevel model however is based on the longitudinal analysis and trigger-based changes of resistance behaviors, it creates a contradictory situation as the resistance behavior of the individuals in the case organization remained at an almost similar level throughout the chosen time scope of the study. This lack of significant changes in resistance behaviors also rendered the need to analyze group resistance behaviors to a bare minimum, as the interviewed individuals' behaviors and opinions differed slightly in each case, implying that the case organization's overall resistance was still a compilation of various individual behaviors rather than a shared behavior type. This argument brings forth an important theoretical implication, and will be discussed further in the following chapter.

5.6. Emergence of individual and group resistance behaviors

Lapointe and Rivard (ibid) theorize that individual resistance behaviors in an organization can change into group resistance behaviors, which they have dubbed as the convergence of behaviors. Figure 7 (p. 19) depicts this process. This emergence of group resistance behaviors remained largely unseen in the case context, as the independent individual opinions and resistance behaviors differed slightly, e.g. some client managers were advocates of the KMS while others tried to use it as little as possible.

However, it can be postulated that the common consensus of an unintuitive user interface and illogical folder structure of the KMS has resulted in a somewhat benevolent and stable group resistance behavior, which has remained as the status quo until this day. Lapointe and Rivard (ibid) named this type of process one of compilation, where unit-level phenomenon emerges

from different, independent individual contributions that do not converge. These behaviors did not converge due to the fact that different interviewees perceived the complexity of the user interface differently, some stating that it was not that complex (Offering team member, Markets), while many complained that using it was hard and no help was available if needed (Client managers, client coordinator, offering team members).

Apart from the previous process of compilation, no convergence of resistance behaviors was to be discovered, i.e. this "level change up" (ibid) never took place. This is a positive indication for the case organization, as various individual resistance behaviors most likely are more easily modifiable than an organized, like-minded group resisting a certain feature or the KMS in its entirety. The current lack of the convergence of behaviors can be more accurately be described as rather an implicit, mutual agreement on certain impeding features of the object of resistance. This type of organizational behavior most likely bears little probability of inspiring the user base into more malevolent resistance behaviors.

This chapter has described the main findings of this study in the context of Lapointe and Rivard's (ibid) multilevel model, along with hints of possible managerial and theoretical implications, which will be argued upon in the concluding chapter. Additionally, this chapter brought up a key discovery on the viability of using the multilevel model for analyzing KMS implementations, as knowledge management systems face unique issues during their implementation in organizations – mostly due to their initial purpose of creating cumulating added value which is hard to depict to the user base quickly after the implementation. Organizational attitude towards a KMS may thus remain as mostly indifferent, hindering effective knowledge capture and sharing while also giving researchers a hard time implementing the time and trigger-based multilevel model into the analysis of the said KMS implementation.

6. DISCUSSION AND CONCLUSIONS

6.1. Research summary

This study has taken a comprehensive look into the two research streams topical to the initial practical issue, namely user IS acceptance and adoption research, and user IS resistance research. Ten different studies and their main contributions were introduced in order to depict the multitude of opinions and viewpoints and the lack of unanimity that characterize this area of scientific inquiry. Lapointe and Rivard's 2005 multilevel model was chosen as the primary theoretical framework upon which this study was based on, as it was most congruent with the nature of the research problem facing the case organization. The multilevel model was also used as guidance when constructing interview questions for data collection, in order to gather sufficient data from on the possible temporal or trigger-influenced nature of the research problem.

14 representatives of the case organization were interviewed to ensure that all sides of the organization were heard, and also in order to facilitate the synthesis of corresponding statements for further analysis. The motivator for this study, the aforementioned organizational issue, prohibited the usage of quantitative analysis as such analysis can be deemed rather superfluous in this type of explanatory case research – semi-structured interviews and moderated discussion provided sufficient data. The gathered interview results were used in constructing the most topical findings of the study, which then proved to provide a fertile ground especially for managerial suggestions.

As described in chapter 3.1., a proper research design follows a five-step path (Yin, 2009) from research question(s) to the criteria for interpreting the findings. This study has followed this guideline consistently throughout its progression, which allows external observers to judge its quality based on the four criteria (Yin, 2009) also introduced in chapter 3.1. Shortcomings in this context will be additionally discussed in subchapter 6.5.

6.2. Main findings

It is rather plausible to state that this research has brought forth both practical and theoretical findings, and that the theoretical implications of the findings pose a viable venue for further confirming research. This study has also brought answers to both the research question and the research proposition, of which the latter was discussed in subchapter 3.1.

The research question of this study was *"Which factors primarily have an effect on individual users' attitude and behavior toward a Knowledge Management System and its usage?"* A significant, yet quite surprising finding was the fact that the interviewees did not resist the usage of the IS itself, but rather the lack of managerial guidelines and the inconsistent folder structure which affected their initial attitude of the IS, resulting in resistance behaviors. Therefore this study suggests that more than the technical details of a chosen IS, users focus on the comprehensiveness of the management's guiding and instructing activities concerning the IS after implementation. This statement is corroborated by e.g. Lapointe and Rivard in a later study (2012), who state that "[management] *inaction, which is the most common response of implementers, is systematically associated with an increase in resistance"* (p. 898). An important addition to this finding is the fact that as individuals in the organization work with multiple systems that store customer data, the KMS being one of them, strict and clear management guidelines on which system to use for which specific purpose were argued by the interviewees to be of paramount importance. This fact may seem to be the proverbial "no-brainer", but as this case proves, it is worth management attention. To compactly express this predicament: A certain vision for the usage of the KMS was nowhere to be found.

A frequent complaint on the KMS was the inconsistency and lack of intuitiveness of the user interface (UI) and file storage structure. Thus this study yet again discovered the age-old industry adage of maintaining maximum UI simplicity to facilitate the accomplishment of the user bases' work tasks, as in this case the IS serves as merely a means to a larger end – the constant client management process, i.e. meetings, sales pitches, office work and such. Even though this fact may as well seem a commonplace fact, it has been once again proved that with sufficient

planning with the user base, the UI would most likely increase initial acceptance and reduce resistance.

A common denominator on the rather benign factors that had an effect on the individuals users' attitude and behavior toward the KMS was the rather blatant disregard of how the users would have wanted the KMS environment to look like and how it should have been used in the first place. As the KMS was implemented during the larger business model renewal, its significance or possible future development was never largely discussed with the actual future users. For example, the counterintuitive UI can be attributed essentially to the lack of user feedback on what it should look and be like. Therefore more effective discussion on the needs of the user base would most likely have resulted in less resistance and a more useable KMS.

Another common theme among studies topical to this context is the development of organizational resistance from separate individual behaviors to a unit or group-wide resistance. This did not manifest itself in this study, which was also unexpected, as the case setting initially appeared to hold within itself a more significant resistance attitude. Therefore Lapointe and Rivard's (2005) hypothesis of converging resistance behaviors may not hold true in certain types of information systems implementation scenarios, namely those in which the significance of the information system is not absolutely necessary for the users when doing their jobs – but which would rather bring added value if only used throughout the organization. Knowledge Management Systems (KMS) may be such systems, as demonstrating the full value of these systems can be difficult instantly after implementation as their inherent value lies in the gradually cumulating database of implicit knowledge, easily accessible instructions and guidelines, and templates for repeatable work, gathered from all sides of the organization.

The suitability of using the multilevel model in general in analyzing the types of implementations discussed in the previous paragraph can be put under scrutiny, as the model is largely based on the temporal and evolving nature of user resistance. This finding will be further discussed in subchapter 6.4.

Conclusively, the factors which have an effect on individual users' attitudes and behavior toward an information system and its usage in an organizational context - where a KMS has been implemented to facilitate the co-operation of cross-unit teams – are mainly addressable via simple and comprehensive communication with all future users of the KMS. User resistance does not seem to develop into active or aggressive resistance, but may nullify the wanted organizational impact expected of an implemented KMS, which may then end up as a desolate archive of unneeded, outdated and scattered information.

6.3. Managerial implications

This study provides managers with concrete examples on actions not to take when implementing a KMS, specifically Microsoft Sharepoint, in a multi-unit environment where co-operation is truly necessary in order to capture the full value of the expertise within the organization. The following implications will however be concrete suggestions on how to develop an organization's knowledge management system usage and processes.

Primarily, a clear vision for the usage purpose of the KMS should be thought of and communicated to the entire organization involved, as all constituents should have the same initial perception for what value the KMS is intended to bring. Managers should also strive to seek the opinions of all interest groups that will be using the KMS in the future, as the folder structure and user interface in general should be relevant to the user base's own tasks and e.g. naming conventions and terminology that are already prevalent within the organization should be used. As KMSs inherently do not deliver added value but rather increase their importance in relation to how much information is stored in it by users, it is of paramount importance to make the user experience as fluent and simplistic as possible to minimize the time spent struggling with the KMS and maximize the amount of quickly found relevant information.

Managers should also name responsible individuals for the development and maintenance of the KMS, as a concrete party which to address in troubleshooting situations increases user acceptance of the KMS, according to the individuals interviewed in this study. Without these so called "main users" no one is responsible for the KMS, which likely results in an unorchestrated and siloed mess of storage locations.

Additionally, if a multitude of data storage locations exist, one starting point for all work with the KMS should be considered, to which links to all relevant locations should be placed in a coordinated fashion. This is commonly forgotten during Sharepoint implementations (Technology Services Group, 2011), resulting in a multitude of various uncoordinated data locations.

Above all, the author would like to stress the importance of defining a clear vision for the usage of the KMS and how its usage will differ from other previously implemented similar software solutions already in use, which then should be communicated for all constituents. Without this any KMS implementation is likely to fall prey to the evidently prevalent organizational apathy preventing effective knowledge management.

6.4. Theoretical contributions

The main theoretical contribution of this study is the suggestion that applying the multilevel model (Lapointe and Rivard, 2005) to post-implementation KMS user resistance contexts may not be beneficial, as it suggests that KMS user resistance tends to remain at a stable, apathetic level. This case study and multiple other studies (Akhavan et al., 2005, Storey and Barnett, 2000, Dermott and O'Dell, 2001) also suggest that the significance of a KMS on an individual's work is not one of absolute necessity which obviously mitigates the risk of KMS-directed resistance behaviors developing from passive and apathetic into more malign behaviors. As the model is based on the convergence of resistance behaviors and the trigger-influenced longitudinal development of said behaviors, re-evaluating its worthiness and applicability in post-implementation KMS resistance contexts could well be appropriate.

The previous paragraph gains additional support from the case study as individuals in it stated that the KMS does not invoke strong feelings and is simply not used within the organization. This situation thus drastically differs from e.g. large failed ERP implementations where the daily work of all constituents in an organization is influenced by the IS, whereas KMSs only bear potential to deliver added value but do not directly complicate the life of the user base should its implementation fail. As Lapointe and Rivard discussed information systems as a homogeneous

entity in their 2005 study, this contribution could serve as an extension to it, acknowledging the fact that a KMS implementation should be viewed as a unique type of IS implementation as opposed to treating information systems only a homogeneous black box to which the model is applicable without exceptions.

This study also verified the applicability of the five concepts of the multilevel model in the case study analysis of generic IS user resistance, as it can be applied as a framework to direct the formation of interview questions and as a tool to narrow the scope of a case study within academically acceptable limits.

6.5. Limitations of the study

As this is a single-case study, the inherent limitations of such studies also limit the comprehensiveness and credibility of this research. The claimed results are the end product of the empirical evidence gathered from one organization, while more credible and generalizable results could have been gained from conducting a multi-case study with two or three organizations with similar issues. However, deadline pressures imposed on the author severely limited the scope of this study, while also the initial motivator, a specific organizational issue, demanded careful attention and restricted the chances of involving others organizations under scrutiny.

Additionally, the theoretical generalizability of this study can certainly be debated, as the claimed results are solely based on information extracted from one organization and the level of scientific rigor demonstrated during the course of this study may not satisfy all readers. More quantitative research methods may generate more feasible results, e.g. applying IT-enabled semantic analysis techniques to interview transcriptions to generate data on the appearance of certain terms or word combinations in order to discover common themes relevant to the chosen framework. These results could be more comparable with results from other similar studies.

Finally, the value of the practical suggestions this study makes can be debated, as a myriad of similar professional opinions on this theme are available online. However, the author is under the

firm belief that the practical suggestions made can most likely be put to use in an organization with a similar structure as the case organization.

6.6. Suggestions for future research

Further multi-case studies on the post-implementation attitudes and resistance behaviors concerning Knowledge Management Systems would certainly clarify if the main theoretical contribution of this study holds, as the specific nature of KMS implementations seems to suggest this particular resistance behavior of steady apathy, which seems to hamper the chances of applying the multilevel model in such contexts. This would also provide valuable data on which types of IS implementations the multilevel model is applicable to.

Academic contributions to the topic of implementing Knowledge Management Systems would also be welcome, as their implementations seem to remain a constant source of trouble for organizations. Manager-friendly and applicable frameworks on how to alleviate KMS implementation issues would bring a beneficial addition to the realm of IS research.

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Interviews

All interviews took place within the case company's premises or via phone.

Interviewee	Date of the interview	Duration of the interview	Interview type
General manager	20.9.2012	0:52:07	Face to face
Client manager 1	20.9.2012	0:52:07	Face to face
Client manager 2	19.10.2012	0:46:42	Phone call
Client coordinator 1	24.10.2012	0:32:20	Face to face
Client manager 3	26.10.2012	0:27:16	Face to face
Client manager 4	26.10.2012	0:32:54	Face to face
Unit manager 1	2.11.2012	0:25:30	Face to face
Offering team member, Capital markets	2.11.2012	0:17:55	Face to face
Unit manager 2	5.11.2012	0:31:42	Face to face
Offering team member, Insurance/Underwriting	9.11.2012	0:50:21	Face to face
Offering area manager	9.11.2012	0:33:43	Face to face
Offering team member, Services	13.11.2012	0:36:26	Face to face
Offering team member, Insurance/Underwriting, collaterals	13.11.2012	0:24:17	Phone call
Unit senior advisor, multiple in-depth interviews	-	-	Face to face

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APPENDICES

Appendix 1: List of interview questions

1. What is your name and line of work? How long have you been working in/with MICU?
2. Describe your normal co-operation with other offering team members.
    a. What are the most important repeated processes that are done with the team? What documents are the final products of the work methods?
    b. Which documents are circulated most within the team?
3. The new business model was implemented in 2010. If you remember, please describe how you personally saw Sharepoint as a supporting element to the new processes.
4. Is your attitude different towards Sharepoint now than what it was in 2010 or last year?
5. How do you prefer to share information/opinions/suggestions with your team? What the easiest way to do it in your opinion?
6. How do you see Sharepoint's role in your daily work?
    a. Do you think Sharepoint facilitates your daily work? If not, why?
7. Is using Sharepoint hard? If yes, what kind of things do you think complicate using it?
8. Is it easy to find needed information from Sharepoint?
9. Is it easy to get help for Sharepoint-related usage problems? Who can you ask if necessary?
10. Do you believe that attitudes towards Sharepoint are similar in the entire organization?
11. Do your colleagues' opinion/attitude on Sharepoint have an effect on your own Sharepoint usage?
12. If your Sharepoint usage is low, what exactly affects on this low usage? Which features? Which missing features?
13. Did you feel that you had a say in the implementation of the new business model or the way Sharepoint is used?
14. How much information did you receive on Sharepoint's planned role in the working methods of the offering teams?
15. Which features could facilitate your own work the most?
16. Do you think your own usage of Sharepoint has changed after the implementation of the new business model?

a. If yes, for which reasons?

17. Have there ever been complaints on using Sharepoint from within the offering teams/organization? If yes, why?

18. How much does the top management of MICU (unit managers, general manager) use Sharepoint in your opinion?